1.2.1 Number of Add on /Certificate/Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. where the students of the institution have benefitted during the last five years)

1.2.2 Percentage of students enrolled in Certificate/ Add-on/Value added programs and also completed online MOOC programs like SWAYAM, NPTEL etc.as against the total number of students during the last five years

2022-2023						
Name of Add on /Certificate /Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. programs offered	Course Code (if any)	Year of offering	No. of times offered during the same year	Duration of course	Number of students enrolled in the year	Number of Students completing the course in the year
FOOD AND NEUTRITION(Z)	ASMZOO0001	2022-2023	1	30 HOURS	33	33
NURSERY MANAGEMENT(B)	ASMBOT0002	2022-2023	1	30 HOURS	24	24
GRAPH THEORY(M)	ASMMAT0001	2022-2023	1	30 HOURS	30	30
AZOLLA CULTIVATION(B)	ASMBOT0003	2022-2023	1	30 HOURS	26	26

ವೀರಶೈವ ವಿದ್ಯಾವರ್ಧಕ ಸಂಘ, ಬಳ್ಳಾರಿ.
ಶ್ರೀಮತಿ ಅಲ್ಲಂ ಸುಮಂಗಳಮ್ಮ ಸ್ಮಾರಕ ಮಹಿಳಾ ಮಹಾವಿದ್ಯಾಲಯ
ಶ್ರೀ ತೊಗರಿ ವೀರಪ್ಪನವರ ದತ್ತಿ ಆವರಣ, ಅಲ್ಲಂ ಸುಮಂಗಳಂಮ್ಮ ರಸ್ತೆ, ಗಾಂಧಿನಗರ. ಬಳ್ಳಾರಿ–583103
ನ್ಯಾಕನಿಂದ B^+ ಗ್ರೆಡ್ Accredited by NAAC with B^+ Grade

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Website: www.asmc.org Email: smtasmc@gmail.com

DEPARTMENT OF ZOOLOGY

Date:

To,
The Principal,
Smt. A.S.M. College for Women,
Gandhi Nagar, Ballari.

Subject: Permission to start ADD- ON Course "Food and Nutrition" - regarding

Respected sir,

As cited in above subject, the Department of Zoology is introducing Add- on Course on the topic, "Food and Nutrition" for UG students for the academic year 2022-23. This course helps in Adding extra knowledge along with their regular curriculum in the area of Food and Nutrition and enhances employment opportunities. Kindly give permission for the same and oblige.

Thanking you Sir,

Yours faithfully
(Course Co-ordinator)

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

V.V Sangha's
Smt. A.S.M. College for Women, Ballari
Department of Zoology
ADD-ON COURSE:"FOOD AND NUTRITION" (2022-23)
List of Students Enrolled

Sl.No	UUCMS No.	Name of the student	Signature
1.	U10AI21S0108	Rajeshwari . N	Rajeshwari. N
2.	U10AI21S0127	Shalini . Gooty	Shalini. Gooty
3.	U10AI21S0176	Nandita Hiremath	[illegible]
4.	U10AI21S0251	Alfa Anjum	[illegible]
5.	U10AI21S0154	Dimple Kanwar	Dimple
6.	U10AI21S0195	S.Akshatha	[illegible]
7.	U10AI21S0124	Y.Nisarga	—
8.	U10AI21S0088	Nandita G M	Nandita GM
9.	U10AI21S0134	Shifa D	Shifa D
10.	U10AI21S0094	Medara Seema	Seema
11.	U10AI21S0236	Shalvi Tiwari	Shalvi
12.	U10AI21S0257	Priyanka Thakur	Priyanka
13.	U10AI21S0285	Kumari Chanda Verma	Chanda verma
14.	U10AI21S0240	Anju Verma	Anju Verma
15.	U10AI21S0116	Zunera Mohammadi	Zunera Mohammadi
16.	U10AI21S0121	Umm e Hani	Ummee hani
17.	U10AI21S0193	Dakshayani	Dakshayani
18.	U10AI21S0040	A .Rakshita	A. Rakshitha
19.	U10AI21S0084	Veena Shekhar	Veenashekar
20.	U10AI21S0233	H .M.Aishwarya	H.M Aishwarya
21.	U10AI21S0225	Harshitha .V.G	Harshitha V. G
22.	U10AI21S0095	Vaddara Rajeshwari	V. Rajeshwari
23.	U10AI21S0080	Tailor Ruksana kanekal	T. Ruksana
24.	U10AI21S0082	Vibha.H.C	[illegible]
25.	U10AI21S0115	Ranjita BM	Ranjitha
26.	U10AI21S0120	Umme Rumana Siddiqua	Umme R Siddiqua
27.	U10AI21S0137	Bismillah Begum V	B.M. Vakkund.
28.	U10AI21S0238	Keerthana K	Keerthana. K.
29.	U10AI21S0172	Megha N	Megha. N.
30.	U10AI21S0146	D.Meghana	D. Meghana
31.	U10AI21S0133	Bhoomika bai	Bhoomika Bai
32.	U10AI21S0168	G.Shravani	G. Shravani
33.	U10AI21S0124	Y.Nisarga	—

(Course co-ordinator)

IQAC, Co-ordinator
Smt. Allum Sunandamma Mamoni
College for Women, Ballari-583103

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

V.V Sangha's, Smt. A.S.M. College for Women
BALLARI
583103.

Add on Course Summary/Report (2022-23)

Name of the Course: **FOOD AND NUTRITION**

Course Co-Ordinator: Dr. Syeda Kahkashan Tanveer Fatima

Syllabus Covered:

Day1: Introduction to Food and Nutrition.

Day2 – 6: Basic Concept in Food and Nutrition, Understanding Relationship, Functions of food, Nutrients and its functions, Carbohydrates, Lipids.

Day7 – 10: Proteins, fat – soluble vitamins, water – soluble vitamins, Minerals like Calcium, iron etc.

Day11 – 15: Food Groups nutritional contributions, cereals and its importance, pulses and its importance, Fruits and Vegetables.

Day16 – 18: Milk and Milk products, Eggs and its nutritional value, meat, poultry and Fish.

Day19-20: Fats and Oils, methods of cooking foods.

Day21 – 23: Preservation nutrients losses, Advantages and disadvantages of over cooking of food, various methods of cooking.

Day24 – 27: Minimizing nutrients, overview of food and nutrition, conclusion.

Day28-29: Assignment and Doubt clearing.

Day30: Course Evaluation.

Resource Person: Dr.G .Mallangouda

Participants: 30 in nos.

Duration: 30 Days (30 theory classes of one hr each)

Focal Theme of the Course: Teaching the basis of food its nutritional Significance in human body.

Evaluation: Through Descriptive theory Exam (30 marks; 1 ½ hrs).

Result Details:

Nos. of Students enrolled the course: 30 in nos.

Nos. of Students Completed the Course: 30 in nos.

Outcomes:

- A proper diet is essential from the early stages of life for proper growth and to remain active. Food consumption which largely depends on production and distribution, determines the health and nutritional stages of the population.
- Diet has always played an important role in supporting good health. Food choices influences the health and wellbeing of individuals. Proper nutrition can have an effect on energy levels, alertness, mobility, steadiness etc.
- Undernutrition is a state of nutrient deficiency due to insufficient food intake. Poor diet when combine with poor health can lead to serious health and nutritional problems like decreased immunity, frequent infections, etc. Over nutrition is the opposite of undernutrition and it occurs due to frequent or habitual consumption of nutrients by eating too much food to the level that it becomes dangerous to health, which can lead to obesity.
- Proper food and Nutrition is necessary for growth, maintenance and repair of body's tissues. Food choices can alter health of an individual both positively and negatively.
- Hence present course is an attempt to provide basic terms and their meanings in nutrition, nutrients available in foods grouped into categories, terms under nutrient requirements and use of BMI as an indicator of nutritional status.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
Smt. Allum Sumangalamma Memorial College for Women
Gandhinagar, Ballari – 583103.
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd: 1969

ASMC/Bot/ADC/UGB/22-23 Date: 05-5-2023

To,
The Principal,
Smt. A.S.M. College for Women's
Ballari.

Respected Sir,

Subject: Request for permission to start add on course **"Nursery Management"**

With reference to above subject, we are planning to conduct a 30 hours Add-on course for 4th semester students; this course has vast employment opportunity in Agro industry and develops self employment skills among students hence we the staff members collectively decided to start above said course along with B.Sc. undergraduate course. I am herewith, bringing your kind perusal to permit us to conduct add on course on "**Nursery Management**" in Department of Botany do the needful action.

Thanking You,

Your's Sincerely

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany
Smt. A.S.M. College for Women
Ballari-583103.

Principal
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
Smt. Allum Sumangalamma Memorial College for Women
Gandhinagar, Ballari – 583103.
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
(Accredited by NAAC with 'B⁺' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

ASMC/Bot/ADC/UGB/21-23/09 Date : 20/02/23

Nursery Management

Student enrolment List 2022-23

1. Akanksha B
2. Pavithra M
3. Tailor Kanekal Ruksana
4. Nanditha G.M
5. Maitri Sai Vaiyantika
6. Varshitha M
7. Madhavi
8. Rajeshwari N
9. Keerthi R.M
10. Yasmeen S
11. Bhavani K.M
12. B. Soni
13. Yuvalakshmi A.K
14. Sindhu G.H
15. G. Shravani
16. Megha N
17. Nanditha Hiremath
18. Mullangi Shilpa Sree
19. Akshatha A.V
20. Sampreetha
21. Keerthana K
22. Shreya T
23. Madhu
24. Chandrakala G

Principal
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Head of the Department Botany
Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany
Smt. A.S.M. College for Women
Ballari-583103.

Add on Course Summary

Name of the Course: N**ursery Management**

Course Co-Ordinator: Suhsma VH

Syllabus Covered: 30 days teaching hours

Result Details:

Number of students enrolled the course: 24

Number of students completed the course: 24

About the course

Good nursery management involves many skills .Nursery management plays a crucial role in ensuring the success of agricultural operations. A well-managed nursery can provide healthy and vigorous seedlings that can withstand various biotic and abiotic stresses. In this blog, we will discuss some of the best practices for nursery management that can help growers produce high-quality plants and achieve optimal yields.

Successful plant production is dependent on rapid germination of seeds and propagation of vegetative propagules and their subsequent growth in good, free-draining potting compost well supplied with nutrients and organic matter. During early growth some shade is usually desirable to prevent wilting and water stress. Usually daily watering is required during dry weather. Once growing in the nursery, potted plants must be regularly maintained so that they do not become root-bound and so that the roots do not escape from the pot into the soil below (if this happens it is very difficult to subsequently establish this plant, as its roots will be left in the nursery). Plants should not be kept in the nursery so long that their root systems become coiled.

It is possible to provide favourable growth conditions i.e. germination as well as growth Better care of younger plants as it is easy to look after nursery in small area against pathogenic infection pest and weed.Crop grown by nursery raising is quite early and fetch higher price in the market. So economically more profitable.There is saving of land and labour as main field will be occupied by the crop for lesser duration. Hence intensive crop rotation can be followed.More time is available for the preparation of main field because nursery is grown separately. As vegetable seeds are very expensive, particularly hybrids, seed cost can be economized by sowing them in the nurse

Outcome:

- To Acquire knowledge regarding theory and practice of cultural ana production techniques and methods
- To provide detailed hands on training on mushroom cultivation, packaging and marketing.
- To develop a business plan on nursery Managment
- To help the learners to practice a means of self employment and income generation.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

[Course Co-ordinator]

Principal
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

ವೀರಶೈವ ವಿದ್ಯಾವರ್ಧಕ ಸಂಘ, ಬಳ್ಳಾರಿ
1969-2019
ಶ್ರೀಮತಿ ಅಲ್ಲಂ ಸುಮಂಗಳಮ್ಮ ಸ್ಮಾರಕ ಮಹಿಳಾ ಮಹಾವಿದ್ಯಾಲಯ
ಶ್ರೀ ತೊಗರಿ ವೀರಪ್ಪನವರ ದತ್ತಿ ಆವರಣ, ಅಲ್ಲಂ ಸುಮಂಗಳಮ್ಮ ರಸ್ತೆ, ಗಾಂಧಿನಗರ, ಬಳ್ಳಾರಿ-583103
☎: (08392) 256756 ಫ್ಯಾಕ್ಸ್ : 08392 - 257624 ನ್ಯಾಕ್ ಮೂರನೇ ಚಕ್ರದಲ್ಲಿ ಬಿ+ ಗ್ರೇಡ್ ಮಾನ್ಯತೆ ಪಡೆದಿದೆ.
(ಕರ್ನಾಟಕ ರಾಜ್ಯ ಅಕ್ಕಮಹಾದೇವಿ ಮಹಿಳಾ ವಿಶ್ವವಿದ್ಯಾಲಯದಿಂದ ಸಂಲಗ್ನತೆ ಹೊಂದಿದೆ)
Web Site : www.smtasmc.org E-mail : smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

01-05-2023

To,
The principal,
Smt. ASM College for Women
Ballari.

Sir,
Subject: Request for permission to start add on course **"Graph Theory"**-*reg*

With reference to above subject, we were planning to conduct a 30 hours Add-on course for 4th semester students; this course has vast employment opportunity in Networks, and develops self employment skills among students hence we the staff member collectively decided to start above said course along with B.Sc. undergraduate course: herewith I am bringing your kind perusal to permit us to conduct add on course on "**Graph Theory**" in Department of Mathematics do the needful

Thanking you,

Yours sincerely

Head of the Department of Mathematics
Smt. A.S.M. College for Women
Ballari - 583 103.

Permitted

PRINCIPAL
Smt. Allum Sumang lamma College for Women, BELLARY

V V Sangha's, Smt. A.S.M. College for W... BALLARI 583103.

V V Sangha's

Smt. ASM College for Women, Ballari

Department of Mathematics

Student enrolled list

Sl.No	Register Number	Name of the student	Signature
1.	U10AI21S0066	Anitha Dasar	
2.	U10AI21S0085	Netra	Netra
3.	U10AI21S0107	Rohini	Rohini
4.	U10AI21S0103	Rashmi S	
5.	U10AI21S0279	Ayisha Nasreen	
6.	U10AI21S0277	Saba Kousar	
7.	U10AI21S0065	Anusha Herur	Anusha
8.	U10AI21S0068	Apoorva	APoorva
9.	U10AI21S0023	Ashwini P	
10.	U10AI21S0210	Uma	
11.	U10AI21S0149	Deepika L	Deepika L
12.	U10AI21S0136	Bhagyashri.M	Bhagya
13.	U10AI21S0192	Sai Keerthana k	Saikeerthi
14.	U10AI21S0194	Sahana M	Sahana
15.	U10AI21S0283	Basavarajeshwari.M	Basavaraji
16.	U10AI21S0090	Veena B M	
17.	U10AI21S0209	Kavana	Kavana
18.	U10AI21S0248	K.Nethravathi	K. Netra
19.	U10AI21S0229	Vishalakshi	
20.	U10AI21S0061	A Sudha	A Sudha
21.	U10AI21S0296	Yashoda.N	A. Sudha
22.	U10AI21S0264	K S Roopa	Roopa
23.	U10AI21S0265	Meher Tasneem S	
24.	U10AI21S0272	Suvarna	Suvarna
25.	U10AI21S0060	Afreen Begum	Afreen Begum
26.	U10AI21S0153	Rajeshwari B	Rajeshwari
27.	U10AI21S0096	Kavyashree	Kavya
28.	U10AI21S0138	H Netravathi	Nethravathi
29.	U10AI21S0153	Rajeshwari	Rajeshwari
30.	U10AI21S0147	Priyanka M	priyanka.M

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memo...
College for Women, Ballari-583103

Principal
Smt. Allum Sumangalamma Memo...
College for Women, Ballari-583103

Veerasaivavidyavardhaka sangha's, Ballari.
SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN
Sri TogariVeerappanavara Datti Avarana, GANDHI NAGAR, BALLARI-583103.
Recognised under section 2(f) and 12(B) of the UGC, Accredited by NAAC with B' Grade
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura)
Website: www.asmc.org Ph.: 08392-256756: Email: smtasmc@gmail.com, iqacasmc@gmail.com

Summary report of add on or value added year 2022-23

Name of the Course:**Graph Theory**
Course Co-Ordinator: Ms.Chaitra H S

Resource Person: Dr.V S Prabhaiah
Participants: 30 in nos.
Duration: 30 Days (30 theory classes of one hr each)
Focal Theme of the Course: Study of relationships connections through vertices and edges, exploring ,patterns ,paths,structures in graph for mathematical analysis and application.
Evaluation: Through Descriptive theory Exam (50 marks; 2hrs).
Result Details:
Nos. of Students enrolled the course: 30 in nos.
Nos. of Students Completed the Course: 30 in nos.

Outcomes:

- Network Analysis: Understanding complex relationships in social networks, communication, and transportation systems.
- Optimization: Solving real-world problems efficiently, like route planning and resource allocation.
- Computer Science: Graph algorithms underpin key processes, such as searching, sorting, and network protocols.
- Biology and Chemistry: Modeling molecular structures and biological interactions.
- Social Sciences: Analyzing connections in sociology, linguistics, and information dissemination.

****

Head of the Department of Mathematics
Smt. A.S.M. College for Women
Ballari - 583 103.

Principal
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
Smt. Allum Sumangalamma Memorial College for Women
Gandhinagar, Ballari – 583103.
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd: 1969

ASMC/Bot/ADC/UGB/22-23

Date: 10-6-2023

To,
The Principal,
Smt. A.S.M. College for Women's
Ballari.

Respected Sir,

Subject: Request for permission to start add on course **"Azolla Culitivation"**

With reference to above subject, we are planning to conduct a 30 hours Add-on course for 6th semester students; this course has vast employment opportunity in Agro industry and develops self employment skills among students hence we the staff members collectively decided to start above said course along with B.Sc. undergraduate course. I am herewith, bringing your kind perusal to permit us to conduct add on course on **"Azolla Cultivation"** in Department of Botany do the needful action.

Thanking You,

Permission granted

Principal
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Your's Sincerely
Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany
Smt. A.S.M. College for Women
Ballari-583103.

Smt. A.S.M. College for Women BALLARI 583103.

Smt. Allum Sumangalamma Memorial College for Women

Department of Botany

Add on course on **"Azolla Cultivation"**

Student enrolment list 2022-23

Sl. NO	Name of the Students	Reg. No	Signature
1	Swapna P	S2013401	Swapna P
2	Lakshmi Parvathi K	S2013301	Lakshmi Parvathi.K
3	B Nethra	S2013225	B Nethra
4	G Lavanya	S2013263	G Lavanya
5	P S Sushma	S2013333	P S Sushma
6	Bhoomika S	S2013242	Bhoomika S
7	Sunanda	S2013399	Sunanda
8	Shyamala Desai	S2013388	Shyamala Desai
9	Makam Netravathi	S2013314	Makam Nethravathi
10	G Asrita	S2013273	G. Asrita
11	Shravani PVN	S2013382	Shravani PVN
12	M Bhagya	S2013304	M. Bhagya
13	N Ruthika	S2013320	N. Ruthika
14	Anantalakshmi M T	S2013213	Anantalakshmi
15	Deepa T	S2013255	DEEPA T
16	H Divya Bharathi	S2013274	Bharathi
17	H M Chaitra	S2013275	H.M. Chaitra
18	Kausar	S2013296	Kausar
19	Sahana B	S2013357	Sahana B
20	Nazmin Taj	S2013327	Nazmin Taj
21	Bodam Keerthi	S2013233	Bodam Keerthi
22	N Likitha	S2013321	N. Likitha
23	Shruthi H	S2013384	Shruthi H
24	M Akhila	S2013319	M. Akhila
25	Sudha K	S2013396	Sudha
26	K.H. Pushpavathi	S2013290	Pushpa

Course Coordinator

HOD of Botany

Principal

Principal
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Add on Course Summary

Name of the Course : Azolla Cultivation

Course Co-Ordinator: Pallavi P.

Syllabus Covered: 30 days teaching hours

Result Details:

Number of students enrolled the course: 25

Number of students completed the course: 25

About the course

Azolla commonly known as mosquito fern, duckweed fern, fairy moss, and water fern, is a small free floating aquatic fern native to Asia, Africa, and the America. It grows in swamps, ditches, and even in lakes and rivers where the water is not turbulent (Lumpkin and Plucknett, 1980). The name Azolla is derived from the two Greek words, Azo (to dry) and Ollyo (to kill) thus reflecting that the fern is killed by drought. Azolla-Anabaena is a symbiotic complex in which the endophytic blue-green algae Anabaena zollae lives within the leaf cavities of the water fern Azolla (Lain). The endosymbiont, which is nitrogen-fixing, provides sufficient nitrogen for both itself and its host (Peters, 1978). The fern, on the other hand, provides a protected environment for the algae and also supplies it with a fixed carbon source. It has capability to fix atmospheric nitrogen as well as to produce biomass at a very high rate. A lot of research works was done on azolla during the past and recent decades. The objective of this paper is to review and synthesize those research results with the hope that it will be helpful for collaborative research on this 'green gold mine' in future. Azolla is commonly used as biofertilizer as well as green manure in the paddy field. Now a days Azolla (either fresh or in dried) is also used as a feed ingredient for ruminants and nonruminants type of livestock. Besides its utilization as biofertilizer and livestock feed, azolla, the 'green gold mine' of the nature is also used as medicine, water purifier, human food and for production of biogas.

Outcome:

1. Students can start small scale industry of Azolla Cultivation.
2. Students study the morphology and types of Azolla sp.
3. Enhance knowledge of students to use Azolla as a Biofertilizer.

[Course co-ordinator]
Pallavi

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memori
College for Women, Ballari-583103

Principal
Smt. Allum Sumangalamma Memori
College for Women, Ballari-583103

V.V Sangha's
Smt. A.S.M. College for Women, Ballari
Department of Zoology
ADD-ON COURSE:"FOOD AND NUTRITION" (2022-23)
List of Students Enrolled

Sl.No.	UUCMS No.	Name of the student	Signature
1.	U10AI21S0108	Rajeshwari . N	Rajeshwari. N
2.	U10AI21S0127	Shalini . Gooty	Shalini. Gooty
3.	U10AI21S0176	Nandita Hiremath	[illegible]
4.	U10AI21S0251	Afra Anjum	Afra Anjum
5.	U10AI21S0154	Dimple Kanwar	Dimple
6.	U10AI21S0195	S.Akshatha	Akshatha. S
7.	U10AI21S0124	Y.Nisarga	—
8.	U10AI21S0088	Nandita G M	Nandita GM
9.	U10AI21S0134	Shifa D	Shifa D
10.	U10AI21S0094	Medara Seema	Seema.
11.	U10AI21S0236	Shalvi Tiwari	Shalvi
12.	U10AI21S0257	Priyanka Thakur	Priyanka
13.	U10AI21S0285	Kumari Chanda Verma	Chanda verma
14.	U10AI21S0240	Anju Verma	Anju Verma.
15.	U10AI21S0116	Zunera Mohammadi	Zunera Mohammadi
16.	U10AI21S0121	Umm e Hani	Ummie hani
17.	U10AI21S0193	Dakshayani	Dakshayani.
18.	U10AI21S0040	A .Rakshita	A. Rakshitha
19.	U10AI21S0084	Veena Shekhar	Veeshka
20.	U10AI21S0233	H .M.Aishwarya	H.M Aishwarya
21.	U10AI21S0225	Harshitha .V.G	Harshitha V. G
22.	U10AI21S0095	Vaddara Rajeshwari	V. Rajeshwari
23.	U10AI21S0080	Tailor Ruksana kanekal	T. Ruksana
24.	U10AI21S0082	Vibha.H.C	[illegible]
25.	U10AI21S0115	Ranjita BM	Ranjitha.
26.	U10AI21S0120	Umme Rumana Siddiqua	Umme R. Siddiqua
27.	U10AI21S0137	Bismillah Begum V	B.M. Vakkund.
28.	U10AI21S0238	Keerthana K	Keerthana. K.
29.	U10AI21S0172	Megha N	Megha. N.
30.	U10AI21S0146	D.Meghana	D. Meghana
31.	U10AI21S0133	Bhoomika bai	Bhoomika Bai
32.	U10AI21S0168	G.Shravani	G. Shravani
33.	U10AI21S0124	Y.Nisarga	—

(Course co-ordinator)

IQAC, Co-ordinator
Smt. Allum Suryadanma Memorial
College for Women, Ballari-583103

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

V.V Sangha's, Smt. A.S.M. College for Women
BALLARI
583103.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM

"FOOD AND NUTRITION"

1. Name of the student (in block letters): _____
2. Register Number: _____
3. Semester/ Year: _____
4. Program studying: _____
5. Father's Name : _____
6. Mother's Name : _____
7. Date of Birth and Age: _____
8. Address for Communication : _____
9. Mobile number: 1_____ 2_____
10. E-mail ID: _____

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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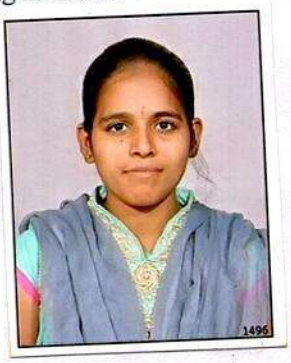
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology



ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): RAJESHWARI. N
2. Register Number: U10AI 2150108
3. Semester/ Year: IV
4. Program studying: B.SC. BZ
5. Father's Name : NAYAKAR HONNALAPPA
6. Mother's Name : SHARADAMMA
7. Date of Birth and Age: 30-12-2001
8. Address for Communication : SRIDHARA GADDE
9. Mobile number: 1 6363599711 2 9900327229
10. E-mail ID: rajjirajjishwari@gmail.com

DECLARATION

I Rajeshwari. N would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Rajeshwari. N
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): SHALINI. GOOTY
2. Register Number: U10AI21S0127
3. Semester/ Year: IV
4. Program studying: Bsc. BZ
5. Father's Name : G. RAMESH
6. Mother's Name : G. POOJA
7. Date of Birth and Age: 09/03/2002 (21)
8. Address for Communication : DOOR NO: 8, SHANKAR COLONY 1st CROSS S.N.PET, BALLARI.
9. Mobile number: 1 9008847789 2 8971082355
10. E-mail ID: Shalinigooty932@gmail.com.

DECLARATION

I SHALINI. GOOTY would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Shalini. Gooty
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): NANDITHA . HIREMATH
2. Register Number: U10AI21S0176.
3. Semester/ Year: IV
4. Program studying: BSc. BZ.
5. Father's Name : M. S. HIREMATH
6. Mother's Name : POORNIMA HIREMATH
7. Date of Birth and Age: 08.04.2003. (20)
8. Address for Communication : NANDI NILAYA, KOTIURESHWAR BADAVANE TALUR ROAD, BALLARI.
9. Mobile number: 1 8861882619 2 9972357403
10. E-mail ID: nanditha.hiremath54@gmail.com.

DECLARATION

I NANDITHA.HIREMATH would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): AFRA ANJUM
2. Register Number: U10AI21S0251
3. Semester/ Year: IV
4. Program studying: BSc . (BZ)
5. Father's Name : NOOR. MOHAMMED BASHA
6. Mother's Name : PARVEEN BEGUM
7. Date of Birth and Age: 16 - 02 - 2003
8. Address for Communication : Behind Karkhana masjid 2nd link road Devi Nagar Ball
9. Mobile number: 1 8147098809 2 9945352794
10. E-mail ID: afraanjum311@gmail.Com.

DECLARATION

I AFRA ANJUM would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): DIMPLE KANWAR
2. Register Number: U10AI21S0154
3. Semester/ Year: 4th
4. Program studying: B.Sc [BZ]
5. Father's Name : NEEB SINGH
6. Mother's Name : HEERA DEVI
7. Date of Birth and Age: 17-03-2001
8. Address for Communication : MAHAVEER STORE MARTIN ROAD, BALLARI.
9. Mobile number: 1 7204861382 2 9480400189
10. E-mail ID: dimplerathore089@gmail.com

DECLARATION

I DIMPLE KANWAR would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Dimple
(Candidate Signature)

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): NANDITA . G.M
2. Register Number: U10AI21500 88
3. Semester/ Year: IV
4. Program studying: _____
5. Father's Name : MARESH . G
6. Mother's Name : RATNAMMA . G
7. Date of Birth and Age: 03/06/2003
8. Address for Communication : Sp Circle . Near Basavabhavan
9. Mobile number: 1 8431623641 2 _____
10. E-mail ID: gmnandita 22@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): SHIFA. D
2. Register Number: U10AJR150134
3. Semester/ Year: IV
4. Program studying:
5. Father's Name : MANSOOR. D
6. Mother's Name : NOORINNISA. D
7. Date of Birth and Age: 26-03-2003
8. Address for Communication : Kalamma Street 4th Ward, Sandur (Bly Dist)
9. Mobile number: 1 9686317184 2 9035117738
10. E-mail ID: Shifamansoor.sdr@gmail.com

DECLARATION

I Shifa. D would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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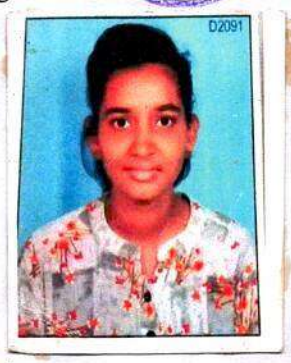
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology



ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): MEDARA. SEEMA
2. Register Number: U10AI21S0094
3. Semester/ Year: 4th
4. Program studying:
5. Father's Name : MEDARA. MANJUNATH
6. Mother's Name : MEDARA. SUMITHRA.
7. Date of Birth and Age: 5/9/2002
8. Address for Communication : Medara street 4th Ward Sandur Bellary (dist).
9. Mobile number: 1 7676847479 2 9448448046.
10. E-mail ID: Seemamedar2001@gmail.com.

DECLARATION

I Medara. Seema would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Seema.
(Candidate Signature)

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): SHALVI TIWARI
2. Register Number: U10AI21S0236
3. Semester/ Year: IV
4. Program studying: _____
5. Father's Name : GIRISH CHANDRA TIWARI
6. Mother's Name : KUSUM TIWARI
7. Date of Birth and Age: 21st October 2003
8. Address for Communication : K-6/11 V.V. Nagar Toranagallu, Bellary.
9. Mobile number: 1 8431678925 2 9449023511
10. E-mail ID: shalvitiwari003@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Shalvi
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-257621
Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): PRIYANKA THAKUR
2. Register Number: U10AI21S0257
3. Semester/ Year: 4th
4. Program studying: _____
5. Father's Name : BIRENDAR THAKUR
6. Mother's Name : MANJU DEVI
7. Date of Birth and Age: 28 January 2002
8. Address for Communication : Near Rukmini panduranga Temple, Honali road guggrahatti, Bellari
9. Mobile number: 1 8884564508 2 _____
10. E-mail ID: Pt720640@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Priyanka
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): KUMARI CHANDA VERMA
2. Register Number: U10AI21S0285
3. Semester/ Year: 4th
4. Program studying: _____
5. Father's Name : BRAJESH VEER KUMAR VERMA
6. Mother's Name : TUNTUN DEVI
7. Date of Birth and Age: 25/01/2003
8. Address for Communication : HONNALI ROAD, GUGGARAHATTI BALLARI
9. Mobile number: 1 7019939075 2 9964559905
10. E-mail ID: Chana.verma.131@gmail.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Chanda Verma
(Candidate Signature)

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): ANJU VERMA.
2. Register Number: U10AT21S0240.
3. Semester/ Year: IV sem
4. Program studying: _____
5. Father's Name : CHOTALAL VERMA
6. Mother's Name : SHILKUMARI DEVI
7. Date of Birth and Age: 27 May 2002.
8. Address for Communication : Near Rukmini panduranga temple Honalli road Guggarahi.
9. Mobile number: 1 9606880451 2 9880655758
10. E-mail ID: anjuv3370@gmail.com.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Anju
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): ZUNERA MOHAMMADI
2. Register Number: U10AI21S0116
3. Semester/ Year: IV sem
4. Program studying: _____
5. Father's Name : G. Abdul Kareem
6. Mother's Name : Sabiya Mohammadi
7. Date of Birth and Age: 07-01-2003
8. Address for Communication : Danappa street near Kamela road, CB. Ballari
9. Mobile number: 1 9590662655 2 7892818986
10. E-mail ID: mohammadizunera01@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Zunera
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): UMME HANI
2. Register Number: U10AR21S0121
3. Semester/ Year: IV sem
4. Program studying:
5. Father's Name : MOHAMMED RAFIQ.
6. Mother's Name : RASHEEDA BEGUM
7. Date of Birth and Age: 17-04-2000
8. Address for Communication : YASEEN SAB STREET G.B.
9. Mobile number: 1 9535336931 2 8904509802
10. E-mail ID: uh69094@gmail.com

DECLARATION

I Ummehani would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Ummehani
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): DHAKSHAYANI.N.
2. Register Number: U10A12180193.
3. Semester/ Year: IV
4. Program studying: B.Sc
5. Father's Name : K.NAGARAJ.
6. Mother's Name : HEMALATHA.
7. Date of Birth and Age: 19-05-2003 . 20
8. Address for Communication : Indra Nagar Ballari.
9. Mobile number: 1 7411619879. 2 9449535340.
10. E-mail ID: dakshayaniprathiba4@gmail.com.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Dakshayani.
(Candidate Signature)

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): A. RAKSHITHA
2. Register Number: U10AI21S0040
3. Semester/ Year: IV SEMESTER
4. Program studying: BSC (CZ)
5. Father's Name : A. VISHNUKUMAR
6. Mother's Name : A. SUNITHA
7. Date of Birth and Age: 26/10/2003
8. Address for Communication : Kappagal road Samruddhi layout Ballari
9. Mobile number: 1 9148221938 2 9481710769
10. E-mail ID: rakshitharakshitha054600@gmail.com.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

A. Rakshitha
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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BALLARI 583103.

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): VEENA SHEKAR
2. Register Number: U10AI21S0084
3. Semester/ Year: 2nd year
4. Program studying: _____
5. Father's Name : SOMASHEKAR
6. Mother's Name : VANI
7. Date of Birth and Age: 30-04-2003
8. Address for Communication : DURGANILAYA, GANDHICHOWK COWLBAZAR BALLARI
9. Mobile number: 1 9986356390 2 7259954138
10. E-mail ID: Veenashekar1360@gmail.com

DECLARATION

I Veena Shekar would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-257628
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): H.M AISHWARYA
2. Register Number: U10AI21S0233
3. Semester/ Year: IV th Sem / 2023
4. Program studying: _____
5. Father's Name : H.M Pampayya Swamy
6. Mother's Name : H.M Shivaleela
7. Date of Birth and Age: 10-10-2003 / 19 Years
8. Address for Communication : Shreedharagadde
9. Mobile number: 1 7019503017 2 7899359136
10. E-mail ID: hmaishwaryahmaishwarya @ gmail.Com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

H.M Aishwarya
(Candidate Signature)

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Date: 29/8/23

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

BALLARI 583103.

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): Harshitha. V. G
2. Register Number: U10AI21S0225
3. Semester/ Year: IV th sem / 2023
4. Program studying:
5. Father's Name : G. Vishwanatha.
6. Mother's Name : G. Eramma.
7. Date of Birth and Age: 06-06-2003 / 20 Years
8. Address for Communication : Sontha ligana colony aradha hospital ballary. Moka road.
9. Mobile number: 1 9901195649 2 8217099101
10. E-mail ID: harshithavg224@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Harshitha. V. G
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date: 29/8/23

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): VADDARA . RAJESWARI
2. Register Number: U1DAI21S0095
3. Semester/ Year: IV th sem
4. Program studying: _____
5. Father's Name : V. Pampapathi
6. Mother's Name : V. Bhagyamma.
7. Date of Birth and Age: 05-07-2003
8. Address for Communication : Bennekalle . Ballary "D" & "E"
9. Mobile number: 1 7483778363 2 9380922147
10. E-mail ID: v.durgesh202086@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): VIBHA. H.C
2. Register Number: U10AI21S0082
3. Semester/ Year:
4. Program studying: B.Sc (BZ)
5. Father's Name : H. Channa Basavana Goud
6. Mother's Name : H.C. Neha
7. Date of Birth and Age: 28-02-2004 (19)
8. Address for Communication : Ramasagara Ballari(Dist). Kampli (Tq)
9. Mobile number: 1 8660304172 2 9916663330
10. E-mail ID: Vibhahalegoudar1@gmail.com

DECLARATION

I Vibha. H.C would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): RANJITHA . B.M.
2. Register Number: U10AI21S0115
3. Semester/ Year: IV th
4. Program studying: B.Sc
5. Father's Name : MALLIKARJUNA . B.
6. Mother's Name : KAMAKSHI . N
7. Date of Birth and Age: 02 - 05 - 2003
8. Address for Communication : Bakdihatti near Anjaneya temple Cowl bazar ballari
9. Mobile number: 1 9036622887 2 9845875570
10. E-mail ID: bmranjitha0@gmail.com

DECLARATION

I Ranjitha.B.M would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Ranjitha
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): UMME ROMANA SIDDIQUA. K
2. Register Number: U10AT21S0120
3. Semester/ Year: IV
4. Program studying: BSC
5. Father's Name : Khaji Gulam Tanveer Siddiqua.
6. Mother's Name : SYEDA Mahe Jabeen
7. Date of Birth and Age: 12-12-2002 [21]
8. Address for Communication : Reddy Street
9. Mobile number: 1 8884610273 2 9901387388
10. E-mail ID: romanasiddiqua5@gmail.com

DECLARATION

I Umme Romana Siddiqua would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

K. Romana Siddiqua.
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyav. rdhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road, Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Email: smtasmc(
Website: www.asmc.org

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): BISMILLA BEGUM VAKKUND
2. Register Number: U10AI21S0137
3. Semester/ Year: IVth Sem | 2nd year
4. Program studying: UG
5. Father's Name : MAKTUMASAB VAKKUND
6. Mother's Name : RABIYA VAKKUND.
7. Date of Birth and Age: 26-06-2003, 20
8. Address for Communication : Jawari street, Cowl bazar, Ballari.
9. Mobile number: 1 8277641153 2 9449480276.
10. E-mail ID: Bismillabegum2003@gmail.

DECLARATION

I Bismilla begum would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

B. M. Vakkund.
(Candidate Signature)

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM Colle
For Women, BAL

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): KEERTANA . K
2. Register Number: U1DAI21S0238
3. Semester/ Year: 2nd year
4. Program studying: BSC . BZ
5. Father's Name : Siddappa . K
6. Mother's Name : Lakshmi
7. Date of Birth and Age: 12/02/2003
8. Address for Communication : Near Sudha cross
9. Mobile number: 1 9632621421 2 8296315085
10. E-mail ID: keertana9113@gmail.com

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Keertana . K
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): MEGHA. N
2. Register Number: U10AI21S0172
3. Semester/ Year: 2nd year
4. Program studying:
5. Father's Name : GADHILINGAPPA
6. Mother's Name : GOWRAMMA
7. Date of Birth and Age: 15-10-2003
8. Address for Communication : Devasamudra, Kampli taluk Bly dist
9. Mobile number: 1 7483085654 2 8861491908
10. E-mail ID: Gowrimegha081@gmail.com

DECLARATION

I Megha. N would like to Enrol in the add-on course on "Food ar Nutrition". I shall abide the rules and regulation of the College.

Megha N
(Candidate Signature)

(Course Co-ordinator)

(Princip
PRINCIPAL
Smt. ASM Coll
For Women, BAL

Date:

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): D. MEGHANA
2. Register Number: U10AI21S0146
3. Semester/ Year: IV sem
4. Program studying:
5. Father's Name : D. RAVI
6. Mother's Name : D. LATHA
7. Date of Birth and Age: 07 - 03 - 2004 and 20 Age
8. Address for Communication : Suggenahalli village Ballari (Dt)
9. Mobile number: 1 9353364621 2 8309497239
10. E-mail ID: saimeghana2107@gmail.com

DECLARATION

I D. Meghana would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

D. Meghana
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road, Gandhi Nagar,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): BHOOMIKA BAI
2. Register Number: U10AI21S0133
3. Semester/ Year: 4th Semester /2nd year
4. Program studying: UG
5. Father's Name : CHANDRA NAIK
6. Mother's Name : LAKSHMI BAI
7. Date of Birth and Age: 26/03/2004 → 19
8. Address for Communication : T.V Sanitorium durgamma Temple Belagi Cross
9. Mobile number: 1 7411017673 2 8147481804
10. E-mail ID: bhumikabai16@gmail.com

DECLARATION

I BHOOMIKABAI would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

Bhumikabai
(Candidate Signature)

Date: 2/11/2023

(Course Co-ordinator)

(Principal)
PRINCIPAL
Smt. ASM College
For Women, BALL

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Website: www.asmc.org Email: smtasmc@g

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): TAILOR KANEKAL RUKSANA
2. Register Number: U10AI2180080
3. Semester/ Year: IV
4. Program studying: Bsc
5. Father's Name : T.K. Sardar hussain
6. Mother's Name : T.K. Khatun bi
7. Date of Birth and Age: 10-6-2023 and 20 years
8. Address for Communication : Bariki street Kanekal (M) Anantapur dist
9. Mobile number: 1 9182872185 2 9492328179
10. E-mail ID: Sanarukku010@gmail.com

DECLARATION

I T.K. Ruksana would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

T.K. Ruksana
(Candidate Signature)

Date: 31/10/23

(Course Co-ordinator)

(Principal)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): G. SHRAVANI
2. Register Number: U10AI21S0168
3. Semester/ Year: IV Sem
4. Program studying: BSc
5. Father's Name : G. PALLA RAO
6. Mother's Name : G. JAYA LAXMI
7. Date of Birth and Age: 10/05/2002 and 21
8. Address for Communication : Near kirani Shop Nadagaddle Camp, Bagalwad, Manvi, Raichur.
9. Mobile number: 1 6364606393 2 9980007779
10. E-mail ID: Shravanig7779@gmail.com

DECLARATION

I G. SHRAVANI would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

G. Shravani
(Candidate Signature)

(Course Co-ordinator)

(Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road , Gandhi Nagar,
BALLARI-583103. Ph. (College): 08392-256756: Res.: 652961, Fax:08392-25762
Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): S. AKSHATHA
2. Register Number: U10AB21S0195
3. Semester/ Year: 4th sem
4. Program studying: _____
5. Father's Name : S. RAMESH
6. Mother's Name : S. PUSHPA
7. Date of Birth and Age: 30/08/2002
8. Address for Communication : Sp. Circle Near Basavabhavana
9. Mobile number: 1 9972342066 2 _____
10. E-mail ID: akshathaS1@gmail.com.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

Veerasaiva Vidyavardhaka Sangha's, Ballari.
Smt. Allum Sumangalamma Memorial College for Women,
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Website: www.asmc.org Email: smtasmc@gmail.com

Department of Zoology

ADD-ON COURSE APPLICATION FORM
2022-23

"FOOD AND NUTRITION"

1. Name of the student (in block letters): Y. NISARGA
2. Register Number: U10AI21S0124
3. Semester/ Year: 2nd year
4. Program studying: _____
5. Father's Name : Y. CHANDRANNA GOUDA
6. Mother's Name : Y. SHARADHA
7. Date of Birth and Age: 15-02-2002
8. Address for Communication : WARD NO.1 SCHOOL ROAD OPP AMBADEVI TEMPLE YELBENCHI. BALLARI
9. Mobile number: 1 8088685363 2 _____
10. E-mail ID: nisargagouda17@gmail.com.

DECLARATION

I _____ would like to Enrol in the add-on course on "Food and Nutrition". I shall abide the rules and regulation of the College.

(Candidate Signature) (Course Co-ordinator) (Principal)

Date:

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

V.V Sangha's
Smt.Allum Sumangalamma Memorial College for Women, Ballari
Department of Zoology
Add - On Course (2021-2022)
FOOD AND NUTRITION

30 Hours

Overview of the Course:

The Department of Zoology offers an Add - on Course on Food & Nutrition. This course ensures the students to develop holistic and multi-dimensional understanding to various aspects of Food and its Nutritional properties which covered under the syllabus, such as Basics about Food, Health and Fitness, Fitness management, Nutrition and its importance.

Objectives of the Course:

- To introduce the Students to the fundamentals of nutrition, food and health.
- To familiarize them with importance of nutrition during various stages of life.
- To create awareness with respective deriving maximum benefits from available food recourses.

Syllabus

Unit 1: Basic concepts in food and nutrition

Basic terms used in study of food and nutrition

- To understand relationship between food and nutrition and health
- Functions of Food-Physiological, Psychological and Social
- Basic food groups and concepts of balanced diet

Unit 2: Nutrients

- Functions , dietary sources and clinical manifestation of deficiency /excess of nutrients
- Carbohydrates, lipids ,and proteins
- Fat soluble vitamins-A,D,E,K
- Water soluble vitamins-thiamin ,riboflavin ,niacin , pyriodoxine ,foliate ,vitamin B12 and vitamin
- Minerals-calcium ,iron ,iodine

Unit 3: Food Groups

- Selection , nutritional contribution and changes during cooking of the following food groups:
- Cereals
- Pulses
- Fruits and Vegetables
- Milk and Milk Products
- Eggs
- Meat, poultry and fishes

- Meat, poultry and fishes
- Fats and oils

Unit 4: Methods of Cooking and Preventing Nutrient Losses

- Dry ,moist ,frying and microwave cooking
- Advantages, disadvantages and the effect of various methods of cooking on nutrients
- Minimizing nutrient losses

Recommended Readings

- Mudambi ,SR and Rajagopal,MV. Fundamentals of Food, Nutrition and Diet Therapy; Fifth Ed; 2012; New Age International publishers.
- Mudambi , SR , Rao SM and Rajagopal , MV . Food Science; Second Ed; 2006; new Age International publishers.
- Srilakshmi B .Nutrion Science; 2012; New Age International (P) Ltd.
- Swaminathan M. Handbook of Food and Nutrtion; %th Edition; 1986; BAPPCO.
- Suri S. And Malhotra A. Food Science,Nutrition and Food Safety Pearson India Ltd.2014.
- Raina U. Kashyap S. Narula V, Thosmas S. Suvira ,Vir S, Chopra S. Basic food Preparation – A complete manual. Orient Longman, 2005.
- Khanna K, Gupta S , Sethi R , Mahana R , Rekhi T.The Arts and Science Of Cooking . Phoenix Publication House Private Ltd. New Delhi.

(Course Co-ordinator)

PRINCIPAL
Smt. ASM College
For Women, BALLARI.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

ADD - ON COURSE ON 'FOOD AND NUTRITION

Commencement of classes → July 2023
End of class

Days: Thur, Fri, Sat
Time: 3:30 - 4:30 pm.
Month: July, 2023
Exam: Aug 10 2023

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF August 2022 - 2023.

Name of the Institute: Smt. A.S.M. College for Women, Ballari

Section: ZOOLOGY Place: Ballari

Sl.No.	Admission No.	NAMES	3/8/22	4.8.22	5.8.22	10.8.22	11.8.22	12.8.22	17.8.22	18.8.22	19.8.22	24.8.22	25.8.22	26.8.22
1	U10AI22S0108	Rajeshwari N	1	2	3	4	4	5	6	7	8	8	9	10
2	U10AI22S0127	Shalini Gooty	1	2	2	3	3	4	5	6	7	8	9	10
3	U10AI22S0176	Nandita Hiremath	1	2	3	3	4	5	6	7	8	9	10	11
4	U10AI21S0251	Afra Anjum	1	2	3	4	5	6	7	8	9	10	11	12
5	U10AI21S0154	Pimple Kanwar	1	2	3	4	5	6	7	8	9	10	11	12
6	U10AI22S0195	S. Akshatha	1	2	3	4	5	6	7	8	8	9	10	11
7	U10AI22S0124	Y. Niranga	0	0	1	2	3	4	5	6	7	8	9	10
8	U10AI22S0088	Nandita G.M	1	2	3	4	5	6	7	8	9	10	11	12
9	U10AI22S0134	Shifa D	1	2	2	3	4	5	6	7	8	9	10	11
10	U10AI22S0094	Medam Seema	1	2	3	4	5	5	6	7	8	9	10	11
11	U10AI22S0236	Shalvi Tiwari	1	2	3	4	5	5	5	6	7	8	9	9
12	U10AI22S0257	Priyanka Thakur	1	2	2	3	4	5	6	7	8	9	10	11
13	U10AI22S0285	Kumari Chandeva	1	2	2	3	4	5	6	7	8	9	10	10
14	U10AI23S0240	Anju Verma.	1	2	3	4	5	6	7	8	9	10	11	12
15	U10AI23S0116	Zunera Mohammadi	0	1	2	3	3	4	5	5	6	7	8	9
16	U10AI23S0121	Ummu Hani	1	2	3	3	4	4	5	6	7	8	8	9
17	U10AI22S0193	Akshayani	1	2	3	4	4	5	6	7	8	9	10	11
18	U10AI23S0040	A Rakshitha	1	2	2	3	3	4	5	6	7	8	9	10
19	U10AI23S0084	Veena Shekar	1	2	2	3	4	5	6	7	8	10	11	12
20	U10AI23S0232	H.M. Aishwarya	1	2	3	4	5	5	5	6	7	8	9	10
21	U10AI22S0225	Harshitha V	1	2	3	4	5	6	7	8	9	10	11	12
22	U10AI23S0095	Vaddare Rajeshwari	1	2	3	4	4	4	5	6	7	8	9	10
23	U10AI23S0082	Vibha HC	1	2	3	4	5	6	7	8	9	10	11	12
24	U10AI22S0115	Ranjitha B.M	1	2	3	4	5	6	7	8	9	10	11	12
25	U10AI22S0020	Ummi Roman Siddique	0	0	3	4	4	5	6	7	8	9	10	11
26	U10AI22S0137	Bismillah Begum V	1	2	3	4	5	5	6	7	7	8	9	10
27	U10AI22S0228	Keerthana K.	1	2	3	4	5	5	6	7	7	8	9	10
28	U10AI22S0142	Megha N.	0	1	2	3	4	5	6	7	8	9	10	11
29	U10AI22S0146	D. Meghana	1	2	2	3	3	4	5	6	7	8	9	10
30	U10AI22S0168	G. Shravani	1	2	2	3	4	5	6	7	8	9	10	11
31														
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		Initials M												
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Sl.No.	1.9	13	2.9	3.9	4.9	15.9	16.9	17.9	20	23.9	24.9	29	30.9	31	2.10	3.10	4.10	5.10	6.10	7.10	No. of days Present	FEES Rs.	P.	Date of Payment
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31																								
Number Present Daily M																								
Number Present Daily E																								
Initials M																								
Initials E																								

1) Genetic concepts & food & Nutrition
2) Endocrinology & reproductive functions of food
3) Nutrients & its functions
4) Carbohydrates
5) Lipids
6) Proteins
7) Water soluble vitamins
8) Fat soluble vitamins
9) Minerals
10) Food Quality
11) Nutritional contents

1) Cereals
2) Pulses
3) Fruits
4) Vegetables
5) Milk & milk products
6) Egg & its Nutritional value
7) Meat & poultry
8) Fish
9) Methods of food cooking
10) Preservation techniques
11) Amount of food & its importance
12) Importance of pressure cooker
13) Food & its importance
14) Kitchen garden
15) Kitchen — of leaves
16) Angular

No. on roll at the begining of month — Admitted during the month — No. on roll at the end of month — No. of working days — Average Attendance during the month — No. on roll during the month

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GPS Map Camera
Ballari, Karnataka, India
Shop No3, near Durgamma Gudi, KHB Colony, Gandhi Nagar,
Ballari, Karnataka 583101, India
Lat 15.15155°
Long 76.933096°
18/09/22 02:10 PM GMT +05:30
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17/08/2023
ZOOLOGY Department
FOOD AND NUTRITION
GPS
Ballari, Karnataka, India
Gandhi nagar 1st cross, ballari
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ROLL NO.	DATE
CLASS	
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Department of Zoology
Add on course
Food and Nutrition

30/30

Anju Verma
BSc IV sem (BZ)
U10AI21S02HO

1) Amino acid : Amino acids are the organic compounds that combine to form proteins, hence they are referred to as the building components of proteins. These biomolecules are involved in several biological and chemical functions in the human body and are the necessary ingredients for the growth & development of human beings.

2) Nutrition : Nutrition is the biochemical and physiological process by which an organism uses food the support its life. it provides organism with nutrients, which can be metabolized to create energy and chemical structures. failure to obtain sufficient nutrients causes malnutrition.

3) Niacin: The generic descriptor for two vitamers, nicotinic acid (pyridine-3-carboxylic acid) and nicotinamide nicotinic acid amide.

4) Calcium: calcium is a chemical element with the symbol ca and atomic number 20. As an alkaline earth metal, calcium is a reactive metal that forms a dark oxide - nitride layer when exposed to air. its physical and chemical properties are most similar to its heavier homologues strontium and barium.

5) Health: Health is a state of complete physical, mental, and social well-being.

6) Pulses: The regular movement of blood through your body that is caused by the beating of your heart and that can be felt by touching certain parts of your body.

7) Balanced diet: A balanced diet is is one that fulfills all of a person's nutritional needs.

8) Energy: Energy is the ability to do work.

9) High fibre diet: A high fiber diet refers to a diet that meets or exceeds the Dietary Reference intake (DRI) for dietary fiber set by the united states institute of medicine (IOM).

10) Fat-soluble vitamins: Vitamins A, D, E and K are called the Fat-soluble vitamins, because they are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats.

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→ 5 marks :-

Q. write a note on basic food groups ?

A:- A food group is a collection of foods that share similar nutritional properties or biological classification. In the united states for instance, U.S.DA has described food as being in from 4 to 11 different groups.

The most common food groups :-

- Dairy, also called milk products and sometimes categorized with milk alternatives or meat, is typically a smaller category in nutrition guides if prevent at all, and is sometimes listed apart from other food groups. examples of dairy products include milk, butter, ghee, yogurt, cheese, cream and ice cream.
- Fruits, sometimes categorized with vegetables, includes apples, oranges, bananas, berries and lemons, fruits contain carbohydrates, mostly in the form of sugar as well as important vitamins & minerals.
- Cereals & legumes, sometimes categorized as grains, is often the largest category in nutrition guides, cereal examples includes wheat, rice, oats, barley bread & pasta, legumes are also known as pulses & includes beans, soy beans, lentils & chickpeas, cereals are a good source of starch.
- Meat, sometimes labelled protein & accasionally inclusives of legumes & beans, eggs, meat analogues & /or dairy, is typically a medium to smaller sized category in nutrition guides, examples includes chicken, fish, turkey & pork and beef.

5

• Vegetables, sometimes categorized with fruit & occasionally inclusive of legumes, is typically a large category second only to grains, & sometimes equal or superior to grains, in nutrition guides, examples include spinach, carrots, onions & broccoli.

• water is treated is very different ways by different food guides. some exclude the category others list it separately from other food groups & yet others make it the center or foundation of the guide water is sometimes categorized with tea fruit juice, vegetable juice and even soup and is typically recommendent in plentiful amounts

2) write a note on method of cooking?

A:- There are many method of cooking most of which have been known since antiquity these include baking roasting frying grilling boiling streaming Braising.

=> Baking: Baking is the method by which food is cooked by hot air country ovens & modern ovens are used for baking,

Eg:- Bread, cake, biscuits and meat can be baked.

=> Roasting:- In this method food is roasted in a heated town or frying pan without covering it. But roasting can be done with or without any median of cooking.

Eg:- Groundnut can be roasted with or

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→ Overdose :-

Too much Vitamin A can be toxic it can effect

⇒ people who take vitamin A supplements those with a high intake of fish liver oil.

⇒ people who take medications that contain retinoids such as acitretin a treatment for psoriasis.

During pregnancy high levels of vitamin a can harm a growing fetus

Symptoms of an overdose includes:-

→ headaches
→ fatigue
→ nausea
→ dizziness

2) Explain in details concept of balanced diet ?

A:- A balanced diet is a diet that contains differing kinds of foods in certain quantities and proportional so that the requirement for calories, proteins, minerals, vitamins and alternative nutrients is adequate and a small provision is reserved for additional nutrients to endure the short length of leanness. In addition, a balanced diet ought to offer bioactive phytochemicals like dietary fiber, antioxidants and nutraceuticals that have positive health advantages. A balanced diet should offer around 60-70% of total

EXTRA

and 20-25% of total calories from fat.

Health benefits of a Balanced diet :-

- Healthy eating increases energy, improves the way your body functions, strengthens your immune system & prevents weight gain the other major benefits are:
- meets your nutritional need. A varied, balanced diet provides the nutrients you need to avoid nutritional deficiencies.
- prevent and treat certain disease. Healthy eating can prevent the risk of developing certain disease such as diabetes, cancer and heart disease. It is also helpful in treating diabetes and high blood pressure.
- Following a special diet can reduce symptoms, and may help you better manage an illness or condition.
- Feel energetic and manages your weight, A healthy diet will assist you to feel higher, provide you with more energy, & help you fight stress.
- Food is the mainstay of many social and cultural events, Apart from nutrition properties, it helps facilitate connections between individuals.

Some General Guidelines for healthy eating.

- The most important rule of healthy eating is not skipping any meal. skipping meals lowers your metabolic rate. Normal eating includes 3 major meals & 2 snacks between meals. also never skip breakfast. It is

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- Learn simple ways to prepare food. Healthy eating doesn't have to mean complicated eating. Keep meal preparation easy, eat more raw foods such as salads, fruits & vegetable juices, and focus on the pleasure of eating healthy food rather than the calories.
- It is important to stop when you feel full. this will help you maintain your weight to an extent. this also will help you remain alert & feeling your but
- Drink lots of water. Keep a bottle of water near you while working, watching TV, etc.
- Variety of foods should be used in the menu. No single food health has all the nutrients.
- To improve the cereal & pulse protein quality, a minimum ratio of cereal protein to pulse protein should 4:1 In terms of the grains it will be eight parts of cereals & one part of pulses.

* Eat five portions of fruits & vegetables everyday.
* limit stimulants such as caffaine, alcohol and refined sugar.
* only eat things you like the taste of find what works for you & don't force yourself to eat things just because they're good for you.

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⇒ Frying : It is the process of cooking food in heat also or oil food. either by shallow frying or by deep frying Shallow frying means frying in with in.
eg:- omelle, cutlets.
Deep frying mean immersing food fatty in hot ghee or oil.

⇒ Grilling : Grilling or boiling refer in the cooking food by exposing it to direct heat in the method food is placed below or above as in between a red-hot surface
eg:- papad corn chunkles Chicken & fish.

⇒ Boiling : It is a method of cooking food by just be immersing in water at 100°c & maintaining the water at that temperature till the food becomes tender.
eg:- Rice egg dhal meat roots and tiber can be cooked by boiling.

⇒ Steaming : It is a method of cooking food in steam generated from hegorously boiling water in a pan.

⇒ Braising : It is a combined cooking method of frying lightly and strewing it slowly in a closed container.
eg:- uppuma, Roasting and boiling cutlet Boiling & shallow fat frying.

3) Explain Sources and functions of proteins?

A:- A healthful eating pattern includes a variety of foods containing protein Both animals and plant food can be excellent source of protein.

They classify the following foods proteins foods

→ Seafood
→ burn meats & poultry
→ Eggs
→ legumes which includes beans and peas
→ nuts
→ Seeds
→ Soya products.

Dairy products Such as milk cheese and yogyurt also contain protein whole grains and vegatables also contain protein Some protein but generally less than other source Animal products tend to contain higher amount of protein than plant foods to people following a vegatarian diet or a began diet may need to plan their meals to remove they meet their protein needs.

EXTRA

→ Functions of proteins.

1) Growth and maintenance
2) causes biochemical reactions
3) Acts as messanger
4) provides Structure
5) maintains proper pH
6) Balances fluides
7) Boosters Immune Health
8) Transports and Stores nutrients
9) provides energy

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→ 10 Marks :-

① Explain sources, functions and disiciency disorders caused by fat soluble vitamin.

A:- Fat soluble vitamins are vitamins A.D.E and K They are present in food containg fats the body absorbs these vitamins as it does dietary fats they do not dissolve in water.

→ Types:-
Vitamin A is not a single vitamin but a collection of compounds known as retinoids Retinoids occur naturally in the human body and they are present is some dietary source

-10/

Some foods provides retinols which the body can use directly as vitamin A others provide provitamin A compounds that the body converts into Vitamin A.

→ function:-

Vitamin A supports several function throughout the body including,
(a) vision
(b) the immune system.

Source.

⇒ people can obtain vitamin A through dietary source

⇒ Animal source provide preformed vitamin A or retinol this type is ready for the body to use.

⇒ plant source provide carotenoids such as beta carotene which is a powerful antioxidant. the body can convert there into vitamin A.

⇒ for this reason lists of ingredient after show vitamin A content as vitamin A RAE RAE means retinol activites equivalents

Animal source of vitamin A include.

⇒ Fish liver oil
⇒ beef liver
⇒ Cheese milk and other diary products
⇒ source of beta carotene include.
⇒ Sweet potato
⇒ Kale spinach and other green leafy vegetables.
⇒ Carrots
⇒ Cantaloupe
⇒ black eyed pea.

→ Deficency :-

Vitamin A deficiency is rare in the united states but it can affect a person who follows a plant based diet has cystic fibrosis

→ A longterm dificency can lead to a loss of might vision and possible a total

Rgno:- U19I2150108

STUDENT'S NAME Rajeshwari.N		TOTAL MARKS OBTAINED
CLASS B.Sc.(BZ)	SUBJECT	
ROLL NO.	DATE	

28/30

15/9/23

1 Mark questions

1. Amino acids :- A simple organic compound containing both carboxyl (-COOH) and an amino (-NH_2) group. a chain of amino acids is protein

2 Nutrition : It is a method in which the food is consumed by the organisms and utilizing the nutrients from food.

3. Niacin :- also known as vitamin B3 is one of the water soluble B vitamins. Niacin is the generic name for nicotine acid.

4 Calcium : calcium a white soft metallic element that is found only in combination with other elements. It is an necessary element making up bodies in animals and plants

5 Health : A state of being free from illness or injury and also being healthy in persons mental and physical health

6. Pulses :- It is a edible seed from a legume plants. They have large amounts of good fats, protein,

It includes pea pod, beans, lentil.

7. Balanced diet: a diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health

8. Energy:- It is the ability to do work or produce heat. We get energy from food we eat and beverages we drink.

9. ~~Hi~~ High fibre diet:- It is a diet refers to that meets and exceeds the dietary reference intake (DRI)

10 Fat-Soluble vitamins:- These are vitamins that are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats
Ex:- vit A, D, E & K.

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5 Marks (Any two)

1 Write a note on basic food groups.

Ans

Food Groups

- Fruits and vegetables
- Starchy food
- Dairy
- Protein
- Fat

The five food groups are:-
1. Fruit and vegetables
2. Starchy food
3. Dairy
4. Protein

STUDENT'S NAME		TOTAL MARKS OBTAINED
CLASS	SUBJECT	
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5. Fat

1. Fruits and vegetables:-

=> We should eat atleast five proportions of fruits and vegetables a day

=> They contain important vitamins and minerals that help prevents diseases as well as fibre which lowers cholesterol

=> Fruit and vegetables and are low in fat, so they are great for bulking out meals and make you keep feel full.

2. Starchy food.

=> Stardy foods like potatoes, bread, rice and pasta should make up around a third of what you eat.

=> They are a good source of energy and essential fibre calcium, iron and vitamins

3 Dairy:-

=> Dairy and dairy alternative are good source of protein and vitamins. They also contain calcium, which keeps our bones healthy and strong

=> Semi-skimmed, skimmed and 1% fat milk all contain less fat than full-fat milk, but still gives you protein vitamins and calcium

4 Protein

=> Pulses contain protein

=> Ex:- beans, peas and lentils

=> Proteins are very useful in making collagen that can make your skin youthful, firm etc, proteins also can make your helps make / build your muscles

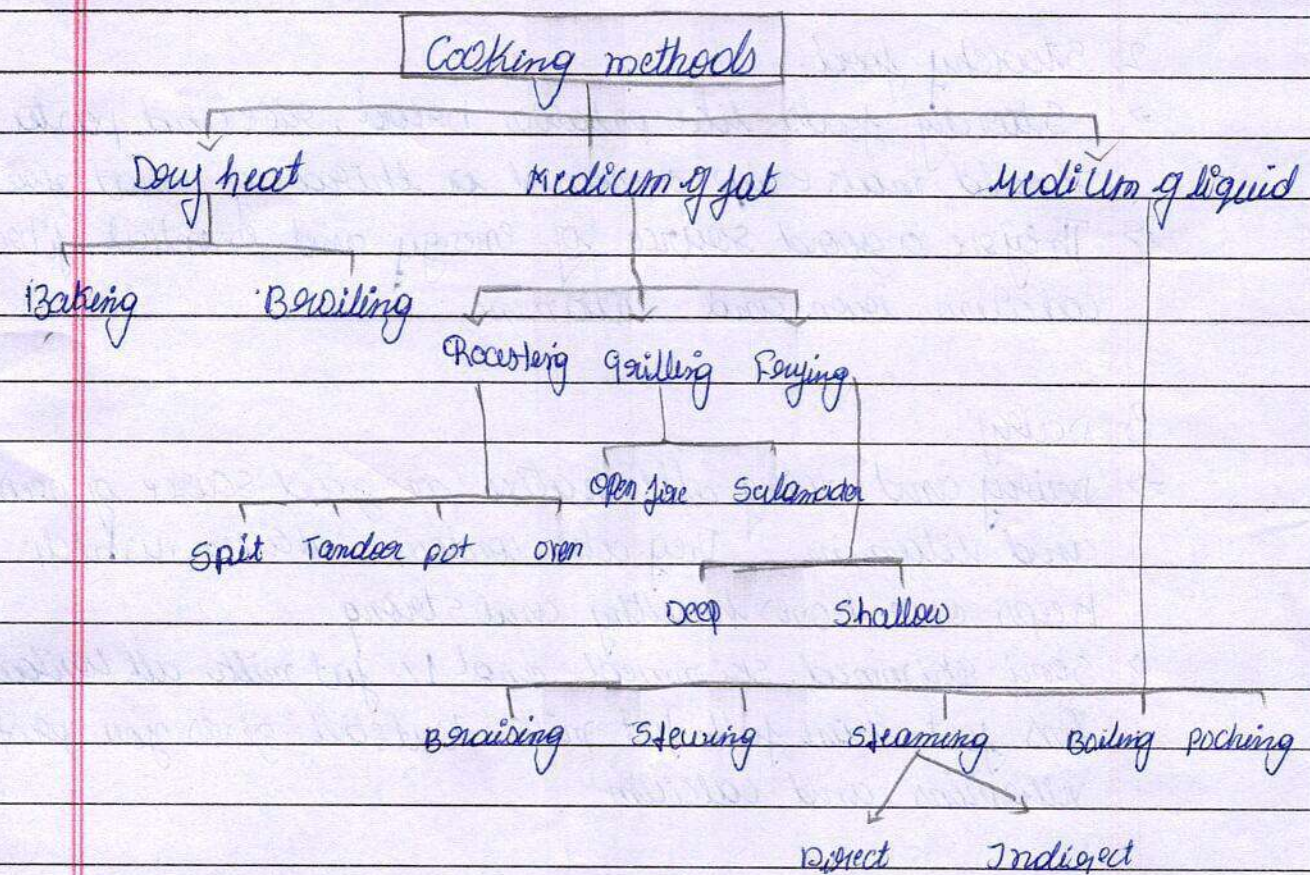
5. Fat:

=> Some fat in our diet is essential but most of us eat too

=> Plant based oils like vegetables, rapeseed and olive oil are rich in unsaturated fat, so they can help lower cholesterol and reduce the risk of heart disease.

=> Lower fat unsaturated spreads are good alternative to butter.

2. Methods of cooking food.



1 Dry heat :- In this method foods are cooked without presence of water, fat or oil, it relies on the circulation of hot air.

a. Baking :- It cooks food by action of dry heat in an oven

Ex:- cakes, Bread rolls.

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b. Broiling : It is cooking by direct heat, it could be done by bar or pan [where food] the source of heat above or below. It is done on iron bar or pan. Where food is cooked - uncovered.

Ex:- Broiled peanut, Broiled Bacon - Basted salmon with mushroom - oyster souce.

2. Medium of fat

a. Roasting : It is cooking of large pieces of meaton open fire. a.) Pot roasting : It is done in a covered pot or pan only meat are used.

B. Oven Roasting : It is done in a roasting tray in an Oven with aid of fat.

C. Spit - roasting

Food is cooked by dried heat, basted with fat.

D. Tandoor roasting

It is done in a clay oven, The heat comes below to above fire should be either coal, charcoal or gas.

B. Grilling : It is cooked on griller bar on heat.

The source of heat may be charcoal gas or electricity

C Frying :- Food is fried when it is placed or immersed in oil or fat at high temperature

a. Deep frying : frying in hot full pot of oil

b. Shallow frying : frying on a pan with little oil

C. Medium of liquid:

a. Braising :- cooking of meat or vegetables by heating them slowly with oil and moisture in a tightly sealed vessel. Braising differs from stewing in which the food is immersed in liquid

b. Stewing: Here the food is slowly cooked, which results in a soup-like food called stew

c. Steaming :- Through the steam from water is passed to the food for few minutes for it to cook to the food for

d. Boiling : The vegetables or meat is immersed in boiling water to fully cook. In this way the nutrients are not lost

e. Poaching : It is a method in which the boiling water is mixed with ½ tsp of vinegar and then stirred, and egg is cracked in b/w and the egg is cooked. In this way egg is cooked from outside and its liquidy/uncooked inside

10 marks

-08- 10. Explain the sources, functions and deficiency disorders

	Sources	Functions	deficiency disorders.
1. carb →	Cereal, whole grains legumes, potatoes cheese	Energy to do work	Hypoglycaemia and ketoacidosis
2. proteins	Almonds, eggs, chicken, yogort, cheese oats, sea food, beans, and pulses	helps repair and build body tissues maintain pH	Kwashiorkor and marasmus
3. Iodine	Eggs, nuts, bread, seaweed, dairy products, and iodized table salt	To make T3 & T4	Goitre, Anaemia Hypothyroidism
4. calcium	oates, spinach, almonds soybeans, egg, beans	Blood clotting muscle contraction	Muscle spasms low bone density

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	lentils milk		Hypocalcaemia
5. Sodium	Onions, cabbage sweet potato, broccoli pumpkin seeds	conduct nerve impulses, maintain electrolyte balance	Gastrointestinal distress, the improper functioning of nerves and muscles
6. phosphorous	milk, yogurt, soyproducts, beans whole grain food products	formation of bones and teeth	weak bones and muscles joint pains, nervous system disorders, obesity
7. Vit-A	Green leafy, veggies yellow coloured fruits, milk nuts, tomatoes carrots, broccolite	healthy teeth skeletal and soft tissue	night Blindness and other vision problems.
8. Vit-B	Whole grain foods legumens eggs. green leafy. vegetables milk and milk products	Formation of RBC's	Beri beri.
9. Vit-C	citrus fruits broccoli, milk and chestnuts	protect cells and keeping them healthy	
10. Vit-D	Fish, liver, egg yolks, cheese citrus, fruit, juices	calcium absorption	
11. Vit-E	potatoes, turnip pumpkin, avacado guava, olives, mango, milk, nuts, seeds etc.	keep immune system strong	Hear problems and Haemolysis

12. Vit-K	Tomatoes - chestnuts broccoli, leaf, cashew nuts lard mangoes etc	blood clotting building bones	haemorrhage

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Student Name..... Date.....
Subject.....Class.....Roll No.....
School/College.....Semester.....

Department of Zoology
Add on Course

Food and Nutrition

AFRA ANJUM
BSc. IV Sem (BZ)
U10AI21S0251

30/30
10/4/23

1) Amino acids
Amino acids are the organic compounds that combine to form proteins, hence they are referred to as the building components of proteins.

2) Nutrition
Nutrition is the biochemical and physiological process by which an organism uses food to support its life.

3) Niacin
Niacin is a B vitamin that's made and used by your body to turn food into energy. it is one of the water-soluble B vitamins.

4) Calcium
A chemical element that is found in foods such as milk and cheese. It helps to makes bones and teeth strong.

5) Health
Health is a state of physical, mental and social well-being of an individual and not merely absence of a disease or infirmity.

6) Pulses
The seeds of some plants such as beans and peas that are cooked and eaten as food.

7) Balanced diet
A diet consiting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.

8) Energy
Energy is the ability to do work or produce heat. ~~In the context o~~ and also the energy we get from food and beverages, which our bodies use for all activities, including breathing, circulating blood and moving our muscles.

9) High fibre diet
High-fibre foods tends to have a lower energy density, which means they provide fewer kilojoules per gram of food.

10) Fat soluble vitamins
Vitamins A, D, E, and K are called the fat-soluble vitamins, because they are soluble in organic solvents and absorbed and transported in a manner similar to that of fats.

Student Name..... Date.....
Subject..... Class..... Roll No.....
School/College..... Semester.....
Total Marks

1 5- marks

1) Write a note on basic food groups?

Ans:- A food group is a collection of foods that share similar nutritional properties or biological classifications. ~~Most~~ In the united states for instance, USDA has described food as being in from 4 to 11 different groups.

The most common food groups :-.

- Dairy, also called milk products and sometimes categorized with milk alternatives or meat, is typically a smaller category in nutrition guides if present at all, and is sometimes listed apart from other food groups. Examples of dairy products include milk, butter, ghee, yogurt, cheese, cream and ice cream.

05

- Fruits, sometimes categorized with vegetables, include apples, oranges, bananas, berries and lemons. Fruits contain carbohydrates, mostly in the form of sugar as well as important vitamins and minerals.
- Cereals and legumes, sometimes categorized as grains, is often the largest category in nutrition guides, Cereal examples include wheat, rice, oats, barley, bread and pasta. Legumes are also known as pulses and include beans, soy beans, lentils and chickpeas. Cereals are a good source of starch.
- Meat sometimes labelled protein and occasionally inclusive of legumes and beans, eggs, meat analogus and/or dairy, is typically a medium- to smaller-sized category in nutrition guides. Examples include chicken, fish, turkey, pork

- Vegetables, sometimes categorized with fruit and occasionally inclusive of legumes, is typically a large category second only to grains, or sometimes equal or superior to grains, in nutrition guides. Examples include spinach, carrots, onions and broccoli.
- Water is treated in very different ways by different food guides. Some exclude the category others list it separately from other food groups, and yet other make it the center of foundation of the guide. Water is sometimes categorized with tea fruit juice, vegetable juice and even soup, and is typically recommended in plentiful amounts.

2) ~~There~~ Write a note on methods of cooking?

Ans:- There are many methods of cooking, most of which have been known since antiquity. These include baking, roasting, frying, grilling, boiling, steaming, braising

- Baking : Baking is the method by which food is cooked by hot air. Country ovens and modern ovens are used for baking.
  Eg: Bread, cake, biscuits and meat can be baked.
- Roasting : In this method, food is roasted in a heated tawa or frying pan without covering it. But roasting can be done with or without any medium of cooking.
  Eg: Groundnut can be roasted with or without oil.
- Frying : It is the process of cooking food in

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either by shallow frying or by deep frying. Shallow frying means frying in little oil
Eg:- omelette, cutlets.
Deep frying mean immersing food fully in hot ghee or oil.
Eg:- Samosa, chips, poori

- Grilling: Grilling or broiling refers to the cooking of food by exposing it to direct heat. In this method food is placed below or above or in between a red-hot surface.
  Eg:- Papads, corn, phulkas, chicken and fish
- Boiling: It is a method of cooking food by just be immersing in water at 100°c and maintaining the water at that temperature till the food becomes tender.
  Eg:- Rice, egg, dhal, meat, roots and tubers can be cooked by boiling.
- Steaming: It is a method of cooking food in steam, generated from vigorously boiling water in a pan.
  Eg: Idli, Idiappam (String hopper) and vegetables are prepared by steaming.

-05-

- Braising: It is a combined cooking method of frying lightly and stewing it slowly in a closed container.
  Eg:- uppuma - Roasting and boiling, cutlet - Boiling and shallow fat frying.

3) Explain sources and functions of proteins.

Ans:- A healthful eating pattern includes a variety of foods containing protein. Both animal and plant food can be excellent source of protein.

- Seafood
- lean meats and poultry
- eggs
- legumes, which include beans and peas.
- nuts
- Seeds
- Soy products.

Dairy products, such as milk, cheese, and yogurt, also contain protein. Whole grains and vegetables contain some protein, but generally less than other sources.

Animal products tend to contain higher amounts of protein than plant foods, so people following a vegetarian diet or a vegan diet may need to plan their meals to ensure they meet their protein needs.

Functions of protein :-

i) Growth and maintenance
ii) causes biochemical reactions.
iii) Acts as messenger.
iv) Provides structure
v) maintains proper pH
vi) Balances fluids
vii) Boosters immune Health
viii) Transports and stores nutrients
ix) ~~Proteins~~ Provides energy.

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2Q) Explain in detail Concept of balanced diet?

Ans:- A balanced diet is a diet that contains differing kinds of foods in certain quantities and proportions so that the requirement for calories, proteins, minerals, vitamins and alternative nutrients is adequate and a small provision is reserved for additional nutrients to endure the short length of leanness. In addition, a balanced diet ought to offer bioactive phytochemicals like dietary fiber, antioxidants and nutraceuticals that have positive health advantages. A balanced diet should offer around 60-70% of total calories from carbohydra-tes, 10-12% from proteins and 20-25% of total calories from fat.

Health benefits of a Balanced diet:-

-10-

- Healthy eating increases energy, improves the way your body functions, strengthens your immune system and prevents weight gain. The other major benefits are:
- Meets your nutritional need. A varied, balanced diet provides the nutrients you need to avoid nutritional deficiencies.
- Prevent and treat certain diseases. Healthful eating can prevent the risk of developing certain diseases such as diabetes, cancer and heart disease. It is also helpful in treating diabetes and high blood pressure.
- Following a special diet can reduce symptoms, and may help you better manage an illness or condition.
- Feel energetic and manages your weight.

higher, provide you with more energy, and help you fight stress.

- Food is the mainstay of many social and cultural events. Apart from nutrition properties, it helps facilitate connections between individuals.

Some General Guidelines for healthy eating.

- The most important rule of healthy eating is not skipping any meal. Skipping meals lowers your metabolic rate. Normal eating includes 3 major meals and 2 snacks between meals. Also, Never skip breakfast. It is the foremost vital meal of the day.
- Learn simple ways to prepare food. Healthy eating doesn't have to mean complicated eating. Keep meal preparation easy, eat more raw foods such as salads, fruits and vegetable juices, and focus on the pleasure of eating healthy food rather than the calories.
- It is important to stop when you feel full. This will help you maintain your weight to an extent. This also will help you remain alert and feeling your best.
- Drink lots of water. Keep a bottle of water near you while working, watching TV, etc.
- Variety of foods should be used in the menu. No single food has all the nutrients.
- To improve the cereal and pulse protein quality, a minimum ratio of

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be 4:1. In terms of the grains, it will be eight parts of cereals and one part of pulses.

- Eat five portions of fruit and vegetables every day.
- Keep a supply of healthy snacks to hand. This will stop you from eating an unhealthy snack when hungry.
- Remove all visible fat from food before you cook it - take the skin off chicken and trim the white fat off any meat.
- Limit stimulants such as caffeine, alcohol and refined sugar.
- Limit the number of times you eat out to once a week. Take your own packed lunch to work.
- Only eat things you like the taste of - find what works for you and don't force yourself to eat things just because they're good for you.

1Q) Explain sources, function and deficiency disorders caused by fat - soluble vitamins.

Ans:- Fat soluble vitamins are vitamins. A, D, E and K. They are present in food containing fats. The body absorbs these vitamins as it does dietary fats. They do not dissolve in water.

Types:-

Vitamin A is not a single vitamin. But a collection of compounds known as retinoids. Retinoids occur naturally in the human body and they are present in some dietary sources.

body can use directly as vitamin A, other provide provitamin A. Compounds that the body converts into vitamin A.

Functions:-
Vitamin A supports several function through out the body including
a) Vision
b) the immune system.

Sources:-
- People can obtain vitamin A through dietary sources.
- Animal sources provide performed vitamin A or retinoids this type is ready for the body to use.
- plant source provide carotenoids such as beta carotene. which is a powerful antioxidant. The body can convert these into vitamin A.
- For this reason lists of ingredients often show vitamin A content as vitamin A. RAE. RAE means retinol activity equivalents.

Animal sources of vitamin A include
* Fish liver oil.
* beef liver
* cheese milk and other dairy products
* sources of beta carotene include
* sweet potato
* Kale spinach and other green leafy vegetables.

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* cantaloupe
* Black eyed peas

Deficiency :-

Vitamin A deficiency is rare in the united states but it can affect a person who follows a plant based diet has cystic fibroses.

A long term deficiency can lead to a loose of might vision and possible a total vision.

Overdose :-

- Too much vitamin A can be toxic it can effect,
- People who take vitamin A supplements
- Those with a high intake of fish liver, oil.
- People who take medications that contain retinoids such as aciterlin a treatment for psoriasis.
- During proganancy high levels of Vitamins A can harm a growing feteus.

Symptoms of an overdose include.

- Headache
- Fatigue
- Nausea
- dizziness

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Mark questions:-

mino acids: A simple organic compound conta
carboxyl (-COOH) and an amino (-N
a chain of amino acids is protein.

lutrition: It is a method in which the food
by the organisms and utilizing the nutrients
food.

iacin: also known as Vitamin B3 is one of
vater soluble B vitamins. Niacin is the gener
for nicotine acid.

cium: Calcium is a white soft metallic element.
nly in combination with other elements. It is c
element making up bodies in animals and p
lth: A state of being free from illness or
nd also being healthy in person's mental an
health.

es: It is a edible seed from a legume pla
They have large amounts of good fats, Protei
It includes pea pod, beans, lentil.

7.) Balanced diet: a diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.

8.) Energy: It is the ability to do work or produce heat. We get energy from food we eat and beverages we drink.

9.) High fibre diet: It is a diet refers to that meets and exceeds the dietary reference intake (DRI).

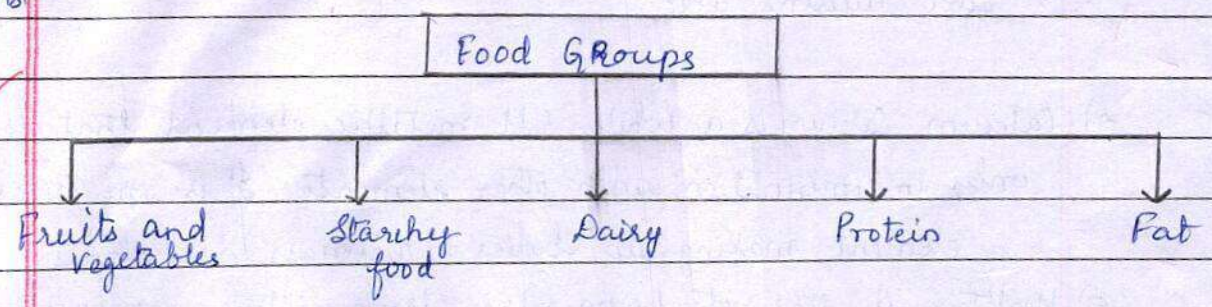
10.) Fat - Soluble vitamins: These are vitamins that are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats.
Ex:- Vit A, D, E & K.

5 Marks :- (Any two)

(1.) Write a note on basic food groups.

Ans:-

05



The five food groups are:-
1) Fruit and vegetables
2) Starchy food
3) Dairy

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1 Mark questions:-

1.) Amino acids: A simple organic compound containing both carboxyl (-COOH) and an amino (-NH_2) group. a chain of amino acids is protein.

-1-

2.) Nutrition: It is a method in which the food is consumed by the organisms and utilizing the nutrients from food.

-1-

3.) Niacin: also known as Vitamin B3 is one of the water soluble B vitamins. Niacin is the generic name for nicotine acid.

-1-

4) Calcium: Calcium is a white soft metallic element that is found only in combination with other elements. It is an necessary element making up bodies in animals and plants.

-1-

5.) Health: A state of being free from illness or injury and also being healthy in person's mental and physical health.

-1-

6.) Pulses: It is a edible seed from a legume plants. They have large amounts of good fats, Protein. It includes pea pod, beans, lentil.

-1-

7.) Balanced diet: a diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.

-1-

8.) Energy: It is the ability to do work or produce heat. We get energy from food we eat and beverages we drink.

-1-

9.) High fibre diet: It is a diet refers to that meets and exceeds the dietary reference intake (DRI).

-1-

10.) Fat - Soluble vitamins: These are vitamins that are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats.
Ex:- Vit A, D, E & K.

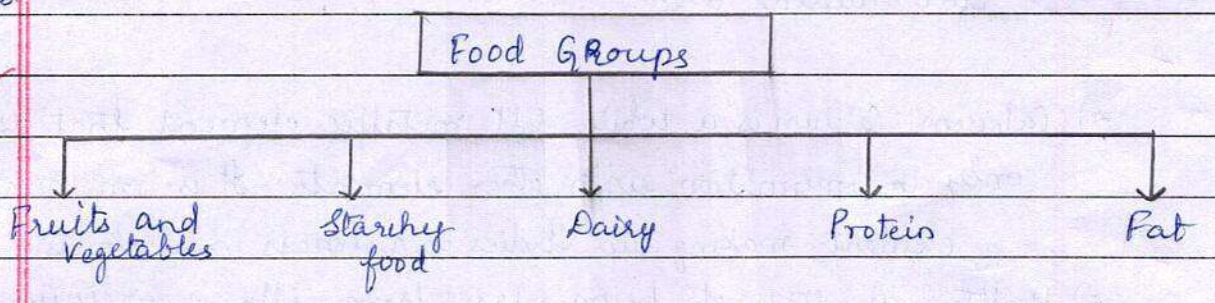
-1-

5 Marks :- (Any two).

(1.) Write a note on basic food groups.

Ans:-

-05-



The five food groups are:-
1.) Fruit and vegetables
2.) Starchy food
3.) Dairy
4.) Protein
5.) Fat.

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① Fruits and vegetables :-

→ We should eat atleast five portions of fruits and vegetables a day.

→ they contain important vitamins and minerals that help prevent diseases as well as fibre which lowers cholesterol.

→ Fruit and vegetables are low in fat, so they are great for bulking out meals and make you keep feel full.

② Starchy food :-

→ Starchy foods like potatoes, bread, rice and pasta should make up around a third of what you eat.

→ they're a good source of energy and essential fibre, calcium, iron and vitamins.

③ Dairy :-

→ Dairy and dairy alternatives are good source of protein and vitamins. They also contain calcium, which keeps our bones healthy and strong.

→ Semi-skimmed, skimmed and 1% fat milk all contain less fat than full-fat milk, but still gives you protein, vitamins and calcium.

④ Protein

→ Pulses ~~are~~ contain protein.

→ Ex: beans, peas and lentils.

→ Proteins are very useful in making collagen that ~~have~~ can make your skin youthful, firm etc. Proteins also helps make / build your muscles.

⑤ Fat :

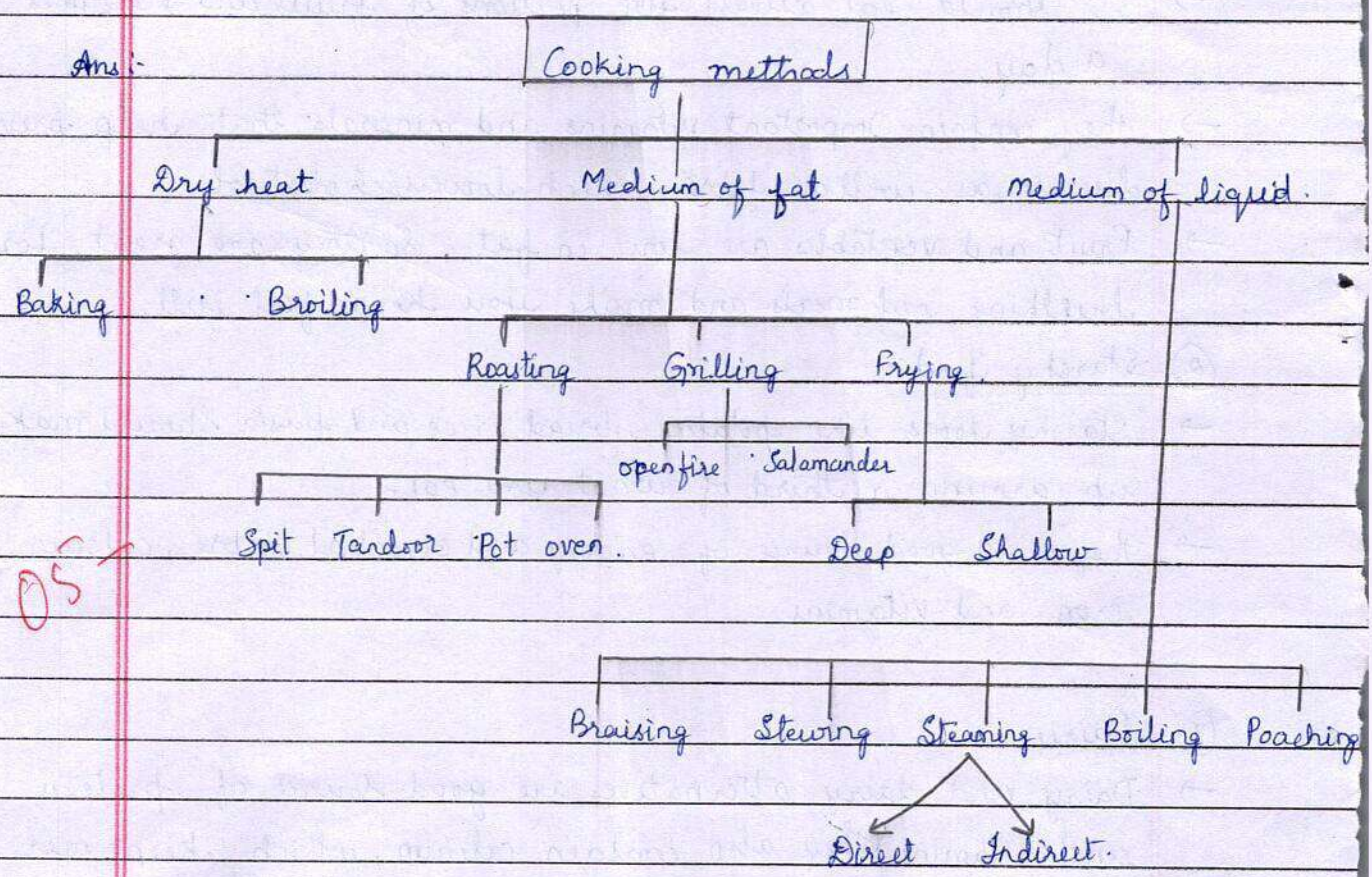
→ Some fat in our diet is essential but most of us eat too m

→ Plant based oils like vegetables, rapeseed and olive oil are rich in unsaturated fat, so they can help lower cholesterol and reduce the risk of heart disease.

→ Lower fat unsaturated spreads are good alternative to butter

② Methods of cooking food.

Ans:-



05

① Dry heat :- In this method foods are cooked without presence of water, fat or oil, it relies on the circulation of hot air

a) Baking: It cooks food by action of dry heat in an oven.
Ex: Cakes, Bread rolls.

b) Broiling: It is cooking by direct heat, it could be done by the source of heat above or below. It is done on iron bar or pan, where food is cooked uncovered.
Ex: Broiled peanut, Broiled Bacon - Basted Salmon with Mushroom - oyster Sauce.

② Medium of fat:-

(a) Roasting: It is cooking of large pieces of meat on open fire.

A.) Pot roasting: It is done in a covered pot or pan, only meat are used.

B.) Oven Roasting: It is done in a roasting tray in an oven with aid of fat.

10 marks :-

(1Q.) Explain the sources, functions and deficiency disorders.

Ans:-	Sources.	functions	deficiency disorders.
(1.) Carbs →	cereal, whole grains, legumes, potatoes, cheese	Energy, to do work,	Hypoglycaemia and ketoacidosis.
2.) Proteins	Almonds, eggs chicken, yogurt, cheese, oats, seafood, beans and pulses	helps repair and build body tissues. maintain pH.	Kwashiorkar and Marasmus.
3.) Iodine	Eggs, nuts, bread, seaweed, dairy products, and iodized table salt	To make T_3 & T_4	Goitre, Anaemia, Hypothyroidism
(4.) Calcium	Dates, spinach, almonds, soybeans eggs, beans, lentils milk	Blood clotting, muscle contraction	Muscle spasms, low bone density and Hypocalcaemia.
5.) Sodium	Onions, Cabbage Sweet potato, broccoli, pumpkin seeds	Conduct nerve impulses, maint-ain electrolyte balance.	Gastrointestinal distress, the improper functioning of nerves and muscles
6.) phosphorous	Milk, yogurt, Soy products, beans, whole grain food products	formation of bones and teeth	Weak bones and muscles, joint pains, nervous :

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(c.) Spit - roasting:
Food is cooked by dried heat, basted with fat.
b.) Tandoor roasting:
It is done in a clay oven. The heat comes below to above fire should be either coal, charcoal or gas.

(B.) Grilling :- It is cooked on griller bar on heat.
The source of heat maybe charcoal, gas or electricity.

(c.) Frying : Food is fried when it is placed or immersed in oil or fat at high temperature.
a) Deep frying :- frying in hot full pot of oil.
b) Shallow frying :- frying on a pan with little oil.

[c.] Medium of liquid:
a) Braising: Cooking of meat or vegetables by heating them slowly with oil and moisture in a tightly sealed vessel. Braising differs from stewing, in which the food is immersed in liquid.
b.) Stewing :- Here the food is slowly cooked, which results in a soup - like food called a stew.
c.) Steaming :- Through the steam from water is passed to the food for few minutes for it to cook.
d.) Boiling : The ~~to~~ vegetables or meat is immersed in boiling water to fully cook. In this way the nutrients are not lost.
e) Poaching: It is a method in which the boiling water is mixed with 1/2 tbsp of vinegar and then stirred, and egg is cracked in bw and the egg is cooked. In this way, egg is cooked from outside and its liquidy/uncooked inside.

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(7.)	Vit - A	Green leafy Veggies, yellow coloured fruits, milk, nuts, tomatoes, carrots, broccoli etc	healthy teeth, skeletal and soft tissues	Night Blindness and other vision problems.
(8.)	Vit - B	Whole grain foods, legumes eggs, green leafy vegetables milk and milk products.	formation of RBC's	Beri beri.
(9.)	Vit - C	Citrus fruits, broccoli, milk and chestnuts	protect cells and keeping them healthy	Gum bleeding and scurvy.
(10.)	Vit - D	Fish, liver, egg yolks, cheese, citrus, fruit juices	Calcium absorption	Improper growth of bones and Rickets
(11.)	Vit - E	Potatoes, turnip, pumpkin, avacado guava, olives, mango, milk, nuts, seeds etc.	Keep immune system strong.	Heart problems and Haemolysis
(12.)	Vit - K	Tomatoes, chest-nuts, broccoli beef, cashew nuts, lamb, mangoes etc	blood clotting, building bones.	Haemorrhage.

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Department of Zoology
Add on Course
Food & Nutrition

Shalvi Tiwari
BSc IV sem (CZ)
U10AI21S0236.

I. Answer the following questions :-

1. Amino acids :- Amino acids are the organic compounds that combined to form proteins, hence they are referred to as the building components of proteins. These biomolecules are involved in several biological and chemical functions in the human body and are the necessary ingredients for the growth and development of human beigns.

2. Nutrition :- Nutrition is the biochemical and physiological process by which an organism uses food to support its life.

3. Niacin :- is the generic descriptor for two vitamers, nicotinic acid (pyridine-3-carboxylic acid) and nicotinamide (nicotinic acid amide).

4. Calcium :- it is a chemical element with the symbol Ca and atomic number 20. As an alkaline earth metal, calcium is a reactive metal that forms a dark oxide-nitride layer when exposed to air.

5. Health :- it is a state of complete physical, mental, and social well-being.

6. Pulse :- the regular movement of blood through your body that is caused by the beating of your heart and that can be felt by touching certain parts of your body.

7. Balanced diet :- is one that fulfills all of a person's nutritional needs.

8. Energy :- is the ability to do work.

9. High fiber diet :- it refers to a diet that meets or exceeds the Dietary Reference Intake (DRI) for dietary fiber set by the United States Institute of Medicine (IOM).

10. Fat soluble vitamins :- Vitamins A, D, E and K are called the fat-soluble vitamins, because they are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats.

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II. Answer any two of the following :-

1. Write a note on basic food groups.

→ The three major groups of food are energy-providing food, ~~bodey~~ body-building foods, and protective foods.

Energy-giving foods :-

- These are composed of carbohydrates and fats.
- Carbohydrates provide us with instant energy.
- Fats are stored in the body as energy reservoirs.
- Example :- Bread, Rice, Potato, Ghee, Oil etc.

Body-building foods :-

- Proteins are referred to as body-building foods because they help in the growth of the body.
- They also help in repairing damaged cells and tissues of the body.
- Examples :- Fish, Meat, Eggs, Milk etc.

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Protective foods :-

- Protective foods are chiefly vitamins and minerals because they protect our body from various diseases.
- They provide resistance to our body against disease-causing germs.
- Examples : fruit, vegetables, etc.

2. Write a note on methods of cooking.

→ Methods of cooking are :-

* Boiling -
Boiling is cooking foods by just immersing them in water at 100°c and maintaining the water at that temperature till the food is tender.

* Simmering -
When food is cooked in a pan with a well fitted lid at a temperature just below the boiling point 82° - 99°c, it is known as simmering. It is a useful methods when foods have to be cooked for a long time to make it tender. eg. vegetables.

05 * Poaching -
This involves cooking in the minimum amount of liquid at a temperature of 80° - 85°c. Foods generally poached are eggs and fish.

* Stewing -
This is a gentle method of cooking in a pan with a tight fitting lid, using small quantities of liquid to cover only half the food. The liquid is brought to a boiling point and then the heat applied is reduced to maintain the cooking at simmering temperature i.e., 98°c.

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v) Steaming -
This method requires the food to be cooked in steam. This is generated from vigorously boiling water or liquid in a pan so that the food is completely surrounded by steam and not in contact with water or liquid. Here the food gets cooked at 100 degrees.

* Pressure cooking -
In pressure cooking escaping steam is trapped and kept under pressure so that the temperature of the boiling water and steam can be raised above 100°C thus reducing cooking time. eg. rice, dal etc.

* Blanching -
Blanching can be done by pouring enough hot water on the food to immerse it for some time or subjecting foods to boiling temperatures for short periods and then immediately immersing them in cold water.

3. Explain sources and functions of proteins.

→ A healthful eating pattern includes a variety of foods containing protein. Both animal and plant food can be excellent source of protein. They classify the following foods as proteins foods:

- Sea food
- lean meats and poultry
- Eggs
- Nuts
- Seeds
- Soya products.

Diary products, such as milk, cheese, and yogurt, also contain protein, whole grains and vegetables contains some proteins, but generally less than other sources.
Animal products tend to contain higher amounts of protein than plant foods, so people following a vegetarian diet or a vegan diet may need to plan this meals to ensure they meet their protein needs.

Functions of protein :-
(i) Growth and maintainance.
(ii) Causes biochemical reactions.
(iii) Acts as messenger.
(iv) ~~Proteins~~ Provides structure.
(v) maintain proper p^H.
(vi) Balanced fluids.
(vii) Boosters immune health.
(viii) Transports and stores nutrients.
(ix) Provides energy.

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III. Answer any one of the following.

1. Explain sources, functions and deficiency disorders caused by fat - soluble vitamins.

→ Fat soluble vitamins are vitamins A.D.E and K. They are present in food containing fats. The body absorbs these vitamins as it does dietary fats. They do not dissolve in water.

Types :-

Vitamin A is not a single vitamin but a collection of compounds known as retinoids. Retinoids occur naturally in the human body and they are present in some dietary sources.

Some foods provides retinols which the body can use directly as vitamin A other provide provitamin A. compounds that the body converts into vitamin A.

09

Function :-

Vitamin A supports several function throughout the body including.

(a) Vision
(b) the immune system

Sources :-

⇒ People can obtain vitamin A through dietary source.
⇒ Animal sources provide preformed vitamin A or retinols. This type is ready for the body to use.
⇒ Plant source provide carolenoids, such as beta source which is a powerful antioxidant. The body can covert three into vitamin A.
⇒ for this reason lists of ingredient often show vitamin A content as vitamin A RAG - AAE means retinol activits equivalents.

Animal sources of vitamin A include.

⇒ Fish liver oil
⇒ buf liver
⇒ cheese milk and other diary products.
⇒ Sweet potato.

Deficiency :-

Vitamin A deficiency is rare in the united states but it can affect a person who follows a plant based diet.
→ has cystic fibroses.

A long term diflicency can lead to a dose of night vision and possible a total vission.

Symptoms of overdose includes are headache, fatigue.

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2. Explain in detail concept of balanced diet.

→ A balanced diet is a diet that contains differeng kinds of a food in certain quantities and proportions so that the requirement for calories proteins, minerals, vitamins and alternative nutrient.

Health benefits of a balanced diet :-

* Health eating increases energy, improves the way your body functions, strengthens your immune system and prevents weight gain. The other major benefits are :-
* meet your nutritional need. A varied, balanced diet provides the nutrients you need to avoid nutritional deficiencies.
* Following a special diet can reduce symptoms, and may help you better manage an illness or condition.
* Feel energetic and manages your weight. A healthy diet will assist you to feel higher, provide you with more energy, and help you fight stress.
* Food is the maintay of many social and cultural events, apart from nutrition properties. It helps facilitate connections between individuals.

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Department of Zoology
ADD-ON COURSE: "FOOD AND NUTRITION" (2022-23)
Marks List

Sl.No.	UUCMS No.	Name of the student	Marks Obtained
1.	U10AI21S0108	Rajeshwari . N	28
2.	U10AI21S0127	Shalini Gooty	30
3.	U10AI21S0176	Nandita Hiremath	30
4.	U10AI21S0251	AfraAnjum	30
5.	U10AI21S0154	Dimple Kanwar	30
6.	U10AI21S0195	S.Akshatha	27
7.	U10AI21S0133	Bhoomika Bai	24
8.	U10AI21S0088	Nandita G M	24
9.	U10AI21S0134	Shifa D	25
10.	U10AI21S0094	Medara Seema	21
11.	U10AI21S0236	Shalvi Tiwari	29
12.	U10AI21S0257	Priyanka Thakur	29
13.	U10AI21S0285	KumariChandaVerma	28
14.	U10AI21S0240	Anju Verma	30
15.	U10AI21S0116	ZuṇeraMohammadi	28
16.	U10AI21S0121	Umm e Hani	28
17.	U10AI21S0193	Dakshayani	29
18.	U10AI21S0040	A .Rakshita	26
19.	U10AI21S0084	VeenaShekhar	25
20.	U10AI21S0233	H .M.Aishwarya	30
21.	U10AI21S0225	Harshitha .V.G	29
22.	U10AI21S0095	Vaddara Rajeshwari	30
23.	U10AI21S0085	Tailor Ruksana kanekal	30
24.	U10AI21S0082	Vibha.H.C	25
25.	U10AI21S0115	Ranjita BM	30
26.	U10AI21S0120	Umme Rumana Siddiqua	25
27.	U10AI21S0137	Bismillah Begum V	30
28.	U10AI21S0238	Keertana K	27
29.	U10AI21S0172	Megha N	25
30.	U10AI21S0146	D.Meghana	27
31.	U10AI21S0168	G Shravani	28
32.	U10AI21S0195	S.Akshatha	24

(Head of the Department) (Course co-ordinator) (Principal)

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Veerasaiva Vidyavardhaka Sangha

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(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)

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V.V. Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Rajeshwari . N of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,
Gandhi Nagar, BALLARI-583103. Ph. 08392-256756
Website: www.asmc.org Email: smtasmc@gmail.com

Vv Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Shalini . Gooty of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

Certificate

This is to certify that Ms. Ummee Hani of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

BALLARI 583103.

Certificate

This is to certify that Ms. Zunera Mohammadi of B.Sc IIIrd Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator	Head of the Department	Principal

Veerasaiva Vidyavardhaka Sangha

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Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,

Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

V.V. Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Kumari Chanda Verma of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

VV Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Shahi Tiwari of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women, BALLARI 583103. VV Sanghna's

Certificate

This is to certify that Ms. D. Nidhgana *of* B.Sc IV *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Food and Nutrition" organized by the Department of Zoology

in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator	Head of the Department	Principal

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

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Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,

Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women, BALLARI 583103. VV Sangha's

Certificate

This is to certify that Ms. Medara Seema. of B.Sc IV Semester,

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Food and Nutrition" organized by the Department of Zoology

in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

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Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,
Gandhi Nagar, BALLARI-583103. Ph. 08392-256756
Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Shifa. D of B.Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for W... 583103

Course Coordinator | Head of the Department | Principal

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

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Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,
Gandhi Nagar, BALLARI-583103. Ph. 08392-256756
Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Nanditha G. M of B. Sc IV Semester, Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on "Food and Nutrition" organized by the Department of Zoology in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

ADD - ON COURSE

Comencement of Classes – 05/05/2022

Last class – 14/07/22

REGISTER OF ATTENDANCE & FEES

2021 – 2022

'FOOD AND NUTRITION'

Class: BSc. IV Sem (Zoology)
Days: Thur, Fri, Sat : 3:30 – 4:30
Month: May / June / July – 22

FOR THE MONTH OF 2021 – 2022

Test Date – 21/7/22

Name of the Institute: Smt. A.S.M College for Women, Ballari

Section: Zoology (Science) Place: Ballari

Sl.No.	Admission No.	NAMES	5/5/22	6/5/22	7/5/22	12/5/22	13/5/22	14/5/22	19/5/22	20/5/22	21/5/22	26/5/22	27/5/22	28/5/22
1.	S201322	5. B. Nethra	1	2	3	4	4	5	6	7	8	0	9	10
2.	" 260.	Divya Sri. S.	1	2	3	4	5	0	6	7	8	9	10	0
3.	" 263.	Lavanya. G.	1	2	3	4	5	6	7	8	9	10	11	12
4.	" 266.	Beela Rani GL	1	2	3	4	5	6	7	8	9	10	11	12
5.	" 275.	Chaitra HM	1	0	0	2	3	4	0	5	6	7	8	0
6.	" 304.	M Bhagya	1	0	2	3	4	5	6	7	8	0	9	10
7.	" 326.	Nandini HM	1	2	0	3	4	5	6	7	8	9	10	0
8.	" 327.	Nazmin Taj	1	0	2	3	4	5	6	7	8	9	0	10
9.	" 331.	Noorjahan Begum KN	1	2	0	0	3	4	5	6	0	7	8	9
10.	" 333	P.S. Sushma	0	1	2	3	4	5	0	6	7	8	9	10
11.	" 337.	Pavithra ML	0	1	2	3	4	5	6	7	8	9	0	10
12.	" 345.	R Jeevitha	1	0	2	3	4	5	6	7	8	9	10	11
13.	" 358.	Sahana G	1	2	0	3	4	5	6	7	0	8	9	0
14.	" 363.	Sai Meghana Ram B	1	2	0	0	3	4	5	0	6	7	8	0
15.	" 372.	Sarvani. K	1	2	3	0	0	4	5	6	7	0	0	8
16.	" 376.	Shakuntala	1	0	2	3	4	5	0	0	6	7	0	8
17.	" 378.	Shilpa BM	1	0	0	2	3	4	5	6	7	8	9	10
18.	" 382.	Sharvani PVN	1	2	3	4	5	6	0	7	8	9	10	11
19.	" 383.	Shravani SM	1	2	0	3	4	5	6	0	7	8	9	10
20	" 384.	Shruthi H	1	2	3	0	4	5	6	7	8	0	9	10
21.	" 399.	Sunanda	1	0	2	3	4	5	6	2	8	9	0	10
22.	" 401.	Swapna P	1	2	3	4	5	6	2	8	9	10	11	12
23.	" 406.	Mubeen Naaz TH	1	2	3	0	4	5	6	7	8	9	10	11
24.	" 408.	Tasleem	1	2	3	4	5	6	0	7	8	9	10	11
25.	" 409.	Tasleem Banu P	1	2	3	4	5	6	7	8	9	10	11	0
26.	" 411.	Tejaswini GM	1	2	3	4	0	5	6	7	8	9	10	11
27.	" 418.	Umme Salma S	1	2	3	4	5	6	7	8	9	10	11	12
28	" 424.	Vandana B	1	2	3	4	5	6	7	8	9	10	11	12
29	" 429.	Vijayashanthi KU	1	2	3	0	0	4	5	6	7	8	9	
30	" 433.	Rainab Taher	1	2	0	3	4	5	6	7	8	9	10	11
		Number Present Daily M												
		Number Present Daily E												
		Initials M	1) Basic concepts in foods & Nutrition	2) Understanding Nutrition & its functions of food	3) Nutrients & their functions	4) Carbohydrates	5) Lipids	6) Proteins	7) Fat soluble Vitamins	8) Water soluble Vitamins	9) Minerals - Ca, Fe, Iodine	10) Food groups	11) Nutritional Guidelines	
		Initials E												

Sl.No.	2/6/22	3/6/22	9/6/22	10/6/22	11/6/22	16/6/22	17/6/22	18/6/22	23/6/22	24/6/22	25/6/22	30/6/22	1/7/22	2/7/22	7/7/22	8/7/22	9/7/22	14/7/22	31	No. of days Present	FEES Rs.	P.	Date of Payment
1.	0	0	11	12	13	14	15	16	17	0	18	19	20	21	22	0	23	24					
2.	11	12	13	0	0	14	15	16	17	18	19	20	0	21	22	23	24	23					
3.	13	14	15	16	17	17	18	19	20	21	22	23	24	25	26	27	28	29					
4.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
5.	9	10	11	12	13	14	0	15	16	17	18	19	20	21	0	22	23	24					
6.	11	0	0	12	13	14	15	16	17	18	19	20	21	22	0	23	24	25					
7.	11	12	13	0	14	15	16	17	0	18	19	20	21	22	23	24	25	26					
8.	11	12	13	0	14	15	16	17	18	19	20	21	22	23	24	25	26	27					
9.	10	11	12	0	13	14	15	16	17	18	19	20	21	22	23	0	24	25					
10.	0	0	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
11.	11	12	13	14	15	16	17	18	19	20	21	22	0	23	0	24	25	26					
12.	12	13	14	15	16	17	0	18	19	20	21	0	22	0	0	23	24	25					
13.	10	11	0	12	13	14	15	16	17	18	0	19	20	21	22	0	23	24					
14.	0	9	10	11	12	13	0	0	0	14	15	16	17	0	0	18	19	20					
15.	9	10	0	11	12	13	14	15	0	0	0	16	17	18	19	0	20	21					
16.	9	0	10	0	11	12	0	13	14	15	16	17	18	19	20	21	22	23					
17.	0	11	12	13	14	15	16	17	18	19	0	20	21	22	23	24	25	26					
18.	12	13	14	15	16	17	18	0	19	20	21	22	23	24	25	26	0	27					
19.	11	12	13	14	15	16	17	18	19	20	0	21	22	23	24	0	25	26					
20	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28					
21.	11	12	13	14	15	16	0	17	18	19	20	21	22	23	24	25	26	27					
22.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
23.	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29					
24.	12	13	14	15	16	0	17	18	19	20	21	22	23	24	25	26	27	28					
25.	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29					
26.	12	13	14	0	15	16	17	18	19	20	21	0	22	23	24	25	26	27					
27.	13	14	0	15	16	17	18	19	20	21	0	22	23	24	25	26	27	28					
28	13	0	0	14	15	16	17	18	19	20	21	22	0	23	24	25	26	27					
29	10	11	12	13	14	15	16	0	17	18	19	20	21	22	0	23	24	25					
30	12	0	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28					
			12) Cereals & its significance	13) pulses & its significance	14) fruits & vegetables	15) Milk & its products	16) Eggs & Nutritive value	17) Meat, poultry & fish	18) fats & oils	19) Methods of food cooking	20) Food Hygiene & Nutrition	21) Protein: (Carbohydrates)	22) Adequacy of diet & its	23) Functions of Carbohydrates	24) various methods of Cooking	25) Minerals & nutritive	26) Lipids (Topic Continued)	27) Overview of food & Nutrition	28) Application of Cooking	29) Assignment				

No. on roll at the begining of month | Admitted during the month | Left | No. on roll at the end of month | No. of working days | Average Attendance during the month | No. on roll during the month

PRINCIPAL
Smt. ASM College For Women, BALLARI

ADD-ON COURSE for [illegible] ON 2022-2023.
'FOOD AND NUTRITION'

Commencement of classes → July 2023
End of cla[sses] →

REGISTER OF ATTENDANCE & FEES

FOR THE MONTH OF August 2022-2023.

Class: BSc. IV Sem
Days: Thur, Fri, Sat
Time: 3:30-4:30 pm
Month: July 2023
Exam: Aug 10 2023

Name of the Institute: Smt. A.S.M. College for women, Ballari

Section: ZOOLOGY

Place: Ballari

Sl.No.	Admission No.	NAMES	3/8/23	4.8.23	5.8.23	10.8.23	11.8.23	12.8.23	17.8.23	18.8.23	19.8.23	24.8	25.8	26.8	1.9	13	2.9	3.9	14.9	15.9	16.9	21.9	22.9	21	22	23	24	25	26	27	28	29	30	31	No. of days Present	FEES Rs.	FEES P.	Date of Payment
1	UIDAI22S0108	Rajeshwari. N	1	2	3	4	4	5	6	7	8	8	9	10	11	12	13	14	15	15	16	17	18	19	20	21	22	22	23	24	25	26						
2	UIDAI22S0127	Shalini Gooty	1	2	2	3	3	4	5	6	7	8	9	10	10	11	12	13	14	15	16	16	17	18	19	20	20	21	22	23	24	25						
3	UIDAI22S0176	Nandita Hiremath	1	2	3	3	4	5	6	7	8	9	10	10	12	13	14	15	16	17	18	19	20	20	21	22	23	24	25	26	26	27						
4	UIDAI21S0251	Afra Anjum	1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
5	UIDAI21S0154	Dimple Kanwar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
6	UIDAI22S0195	S. Akshatha	1	2	3	4	5	6	7	8	8	9	10	11	12	12	12	13	14	15	16	17	18	18	19	19	20	21	22	23	24	25						
7	UIDAI22S0124	Y. Nisarga	0	0	1	2	3	4	5	6	7	8	9	10	11	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26						
8	UIDAI21S0058	Nandita G.M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22	23	24	25	26	27	28	29						
9	UIDAI21S0134	Shifa. D	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	21	22	23	24	25	26	27	28						
10	UIDAI22S0094	Medari Seema	1	2	3	4	5	5	6	7	8	9	10	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
11	UIDAI22S0236	Shalvi Tiwari	1	2	3	4	5	5	5	6	7	8	9	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
12	UIDAI22S0257	Priyanka Thakur	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
13	UIDAI22S0285	Kumari Chande Veer	1	2	2	3	4	5	6	7	8	9	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
14	UIDAI21S0240	Anju Verma	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	28	28						
15	UIDAI22S0116	Zunera Mohammed	0	1	2	3	3	4	5	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
16	UIDAI22S0121	Umme Hani	1	2	3	3	4	4	5	6	7	8	8	9	10	11	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25						
17	UIDAI22S0193	Dakshayani	1	2	3	4	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
18	UIDAI21S0040	A. Rakshitha	1	2	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
19	UIDAI21S0084	Veena Shekar	1	2	2	3	4	5	6	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
20	UIDAI22S0233	H.M. Aishwarya	1	2	3	4	5	5	5	6	7	8	9	10	16	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
21	UIDAI21S0225	Harshitha. V. G	1	2	3	4	5	6	7	8	9	10	11	12	13	13	14	14	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
22	UIDAI22S0095	Vaddare Rajeshwari	1	2	3	4	4	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
23	UIDAI22S0082	Vibha HC	1	2	3	4	5	6	7	8	9	10	11	12	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
24	UIDAI21S0115	Ranjitha B.M.	1	2	3	4	5	6	7	8	19	10	11	12	13	13	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
25	UIDAI22S0020	Umme Romana Siddique	0	0	3	4	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
26	UIDAI22S0137	Bismillah Begum. V	1	2	3	4	5	5	6	7	7	8	9	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
27	UIDAI22S0128	Keerthana K.	1	2	3	4	5	5	6	7	7	8	9	10	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26						
28	UIDAI22S0172	Megha. N	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
29	UIDAI22S0146	D. Meghana	1	2	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28						
30	UIDAI22S0168	G. Shravani	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
31																																						
		Number Present Daily M																																				
		E																																				
		Initials M																																				
		E																																				

No. on roll at the begining of month

Admitted during the month

Left

No. on roll at end of month

No. of working days

Average Attendance during the month

No. on roll during the month

1) Basic concept of food & Nutrition
2) Understanding relationship
3) functions of food
4) Nutrients & its functions
5) Carbohydrates
6) Lipids
7) proteins
8) Fat soluble vitamins
9) water soluble vitamins
10) Minerals
11) food groups
12) Nutrition and contributions
13) Cereals
14) pulses
15) fruits
16) vegetables
17) Milk & milk products
18) Eggs & its Nutritional Value
19) Meat & poultry
20) fats & oils
21) Methods of food cooking
22) Preservation techniques
23) Antioxidants [illegible]
24) Methods of preservation [illegible]

Conservation of foods & Nutrients

Aims of course

Assignment

PRINC[IPAL]
Smt. ASM[...]
For Women

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)

Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,

Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

VV Sanghat's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. Rajeshwari . N of B.Sc IV Semester,

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Food and Nutrition" organized by the Department of Zoology

in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | Head of the Department | Principal

Principal
Smt. ASM College
For Women, BALLARI.

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Certificate

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in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator	Head of the Department	Principal

Add on Course Summary/Report (2022-23)

Name of the Course: **FOOD AND NUTRITION**

Course Co-Ordinator: Dr. Syeda Kahkashan Tanveer Fatima

Syllabus Covered:

Day1: Introduction to Food and Nutrition.

Day2 – 6: Basic Concept in Food and Nutrition, Understanding Relationship, Functions of food, Nutrients and its functions, Carbohydrates, Lipids.

Day7 – 10: Proteins, fat – soluble vitamins, water – soluble vitamins, Minerals like Calcium, iron etc.

Day11 – 15: Food Groups nutritional contributions, cereals and its importance, pulses and its importance, Fruits and Vegetables.

Day16 – 18: Milk and Milk products, Eggs and its nutritional value, meat, poultry and Fish.

Day19-20: Fats and Oils, methods of cooking foods.

Day21 – 23: Preservation nutrients losses, Advantages and disadvantages of over cooking of food, various methods of cooking.

Day24 – 27: Minimizing nutrients, overview of food and nutrition, conclusion.

Day28-29: Assignment and Doubt clearing.

Day30: Course Evaluation.

Resource Person: Dr.G .Mallangouda

Participants: 30 in nos.

Duration: 30 Days (30 theory classes of one hr each)

Focal Theme of the Course: Teaching the basis of food its nutritional Significance in human body.

Evaluation: Through Descriptive theory Exam (30 marks; 1 ½ hrs).

Result Details:

Nos. of Students enrolled the course: 30 in nos.

Nos. of Students Completed the Course: 30 in nos.

Outcomes:

- A proper diet is essential from the early stages of life for proper growth and to remain active. Food consumption which largely depends on production and distribution, determines the health and nutritional stages of the population.
- Diet has always played an important role in supporting good health. Food choices influences the health and wellbeing of individuals. Proper nutrition can have an effect on energy levels, alertness, mobility, steadiness etc.
- Undernutrition is a state of nutrient deficiency due to insufficient food intake. Poor diet when combine with poor health can lead to serious health and nutritional problems like decreased immunity, frequent infections, etc. Over nutrition is the opposite of undernutrition and it occurs due to frequent or habitual consumption of nutrients by eating too much food to the level that it becomes dangerous to health, which can lead to obesity.
- Proper food and Nutrition is necessary for growth, maintenance and repair of body's tissues. Food choices can alter health of an individual both positively and negatively.
- Hence present course is an attempt to provide basic terms and their meanings in nutrition, nutrients available in foods grouped into categories, terms under nutrient requirements and use of BMI as an indicator of nutritional status.

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(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

ASMC/Bot/ADC/UGB/21-23/09

Date : 20/02/23

Nursery Management

Student enrolment List 2022-23

1. Akanksha B
2. Pavithra M
3. Tailor Kanekal Ruksana
4. Nanditha G.M
5. Maitri Sai Vaiyantika
6. Varshitha M
7. Madhavi
8. Rajeshwari N
9. Keerthi R.M
10. Yasmeen S
11. Bhavani K.M
12. B. Soni
13. Yuvalakshmi A.K
14. Sindhu G.H
15. G. Shravani
16. Megha N
17. Nanditha Hiremath
18. Mullangi Shilpa Sree
19. Akshatha A.V
20. Sampreetha
21. Keerthana K
22. Shreya T
23. Madhu
24. Chandrakala G

Head of the Department Botany

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany
Smt. A.S.M. College for Women
Ballari-583103.

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Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com

Estd.: 1969

DEPARTMENT OF BOTANY
ADD-ON COURSE ADMISSION APPLICATION FORM
NURSERY MANAGEMENT

Name of the student : A. V. Akshata

Register No : U10AI21S0189

Class : BSC IV th sem

Date of Birth : 10/3/2004

Community : GM

Address : Basara hatty, Molakalmuru, Chitradurga. Karnataka 577535.

Contact No : 8217018013

Email ID : akshataadurg@gmail.com

DECLARATION

I A. V. Akshata Would like to enrol in the ADD-ON COURSE on **"NURSERY MANAGEMENT"**. I shall abide by the rules and regulations of the college.

Date: 22/09/2023

A. V. Akshata
Signature of the Candidate

(Course-Co-ordinator)

(Principal)

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
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(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

DEPARTMENT OF BOTANY
ADD-ON COURSE ADMISSION APPLICATION FORM
NURSERY MANAGEMENT

Name of the student : Sampreetha.

Register No : U10A19SD200.

Class : BSc IV sem. [BZ].

Date of Birth : 03/06/2003.

Community : III B.

Address : Near BSNL office JP Nagar Karatagi.

Contact No : 8861393819.

Email ID : sampi0319@gmail.com.

DECLARATION

I Sampreetha. Would like to enrol in the ADD-ON COURSE on **"NURSERY MANAGEMENT"**. I shall abide by the rules and regulations of the college.

Date: 9/09/23

Signature of the Candidate

(Course-Co-ordinator)

(Principal)

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
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Estd.: 1969

Add- on course in UG Department of Botany

"Nursery Managment"

Programme outcome:

PO-1 Students can start small scale industry of Nursery Managment.
PO-2 Students study the morphology and types of Nursery.
PO-33Enhance knowledge of student about better care of younger plants as it is easy to look after nursery in small area aganist pathogenic infection pest and weed.

Number of theory credits/week	Number of lecture hours/course	Number of practical credits/week	Number of practical hours/course
4	30	1	8

Content of theory course: : Nursery Managment	30 hrs
Unit-I :- Introduction to Nursery Industry:- The industry profile,professional organization of nursery acceridation , types of nurseries , nursery standards, starting out as producer, how and what to grow, Accessing opportunites, trends in the retail nursery/ garden center industry, Soil and substrate qualaties,Technologies of nurseries, introduction to nursery pest management, introduction to personal and business management	10
Unit-II Cultivation and Maintaince of Nursery: Area of nursery site, location and design for effective envinormental managment,Nursery material,equipments and macheneries, stages of nursery growing , Irrigation and its scheduling , glasshouses, shade house and other structures,operational flow charts, winter protection and impotance of cultivation and Maintaince of Nursery.	10
Unit-III – Management and Marketing of Nursery : HR Management, examples of nursery job description and advertisements, work scheduling, managing facilities, training staff, Horticultutre education, productivity, practical exercise, profit analysis, business planning, Marketing nurseries, marketing mix, product case study, promotions and advertisements, productivity and packging, transport and distribution, sales and after sales service, market research and budget, legal implications of marketing, metric/imperical conversion table, Review of what you have been learning and Final assessment.	10

Pactical Theory of Nursery Mangment

Unit 1. Preparation of different types of cuttings, budding, layering and grafting. Uprooting, digging, labelling and packing of nursery plant.
Unit 2. Immersive Virtual Reality(VR) traininig Ex; tree purning and transplanting sessions for practicing skills and rectifying proposed tree management solutions
Unit 3. Mock laboratory experiments,ex., soil analysis, mycology, testing etc. [Hybrid team-bases inquiry learning]
Unit 4. Virtual field trips to analyse real case scenarios.

References:-

1.biofertilizer germplasm collections at irri by watanabe, I., roger, p.A., laadha, J.k. and Van hove, C. 1992. Publication of the IRRI.

2. Usaha Tani Terpadu PATI published bu agromedia pustaka.

3. Azolla utilization- proceeding of workshop on Azolla use. Fuzhou, Fujian, China, 31March 5 April 1985. Fujian academy of agricultural science.

4. utilization of the Azolla-anabaena complex as a nitrogen fertilizer for rice by watanabae,I., Espinas, C.R., Bejra, N.S and Alimagno,B.V. 1977. Published by the IRRI, Paper 11, Manila, Philippines.s

Pedagogy: Lectures, practicals, participatory learning assessment etc.

Program Outcome:

PO-1 Students can start small scale industry of Nursery Management

PO-2 Students study the morphology and types of Nursery.

PO-3Enhance knowledge of students about better care of younger plants as it is easy to look after nursery in small area against pathogenic infection pest and weed

Number of theory credits/week	Number of lecture hours/course	Number of practical credits/week	Number of practical hours/course
4	30	1	8

Finalization of Approval

1. Launching of Add-on course in UG Dept. Of Botany is approved by all the members unanimously.
2. The Curriculum and Syllabus of "**Nursery Managment**" 30 hours Add-on course in UG department Botany and guidelines 2021- 22, released by UGC are recommended by the panel members.
3. The suggestions/corrections pointed out by the members will be intimated for taking into considerations.

HOD Of Botany & BOS Chairman

Dr. Bheemanagouda N. Patil

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany

Internal expert, BOS

Dr. Ravindra B.K

External Expert, BOS

Dr. V S Bheemaredddy

External Expert, BOS

Dr. Shubhas Emmi

Members BOS

Mrs. Shubha VHM
Ms. Pallavi P
Ms. Sushma VH

Formative assessment	
Assessment Occasion/type	**Weight age in marks**
Practical (IA)	10
Theory (IA)	10
Assessment	30
Total	**50**

Chairman of the Department & BOS

Dr. Bheemanagouda N. Patil

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany

Internal expert, BOS

Dr. Ravindra B.K.

External Expert, BOS

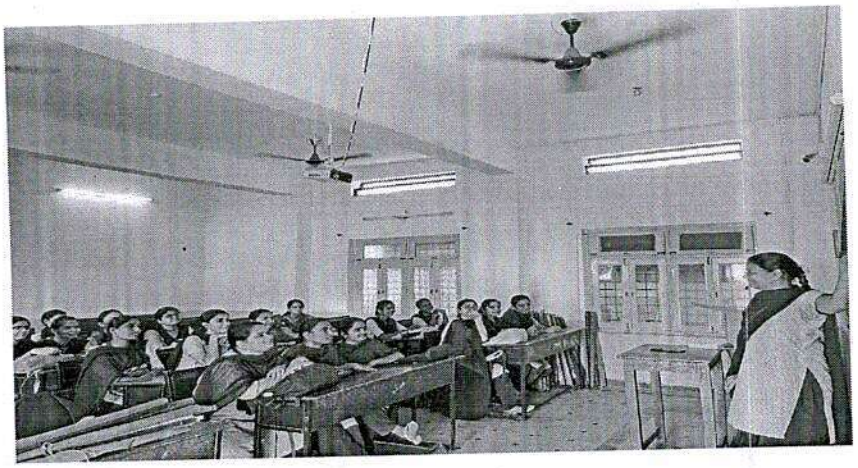
Dr. V. S. Bheemareddy

External Expert, BOS

Dr. Shubhas Emme

Member BOS

Mrs. Shubha V.H.M.
Miss. Pallavi P.
Miss. Sushma V.H.

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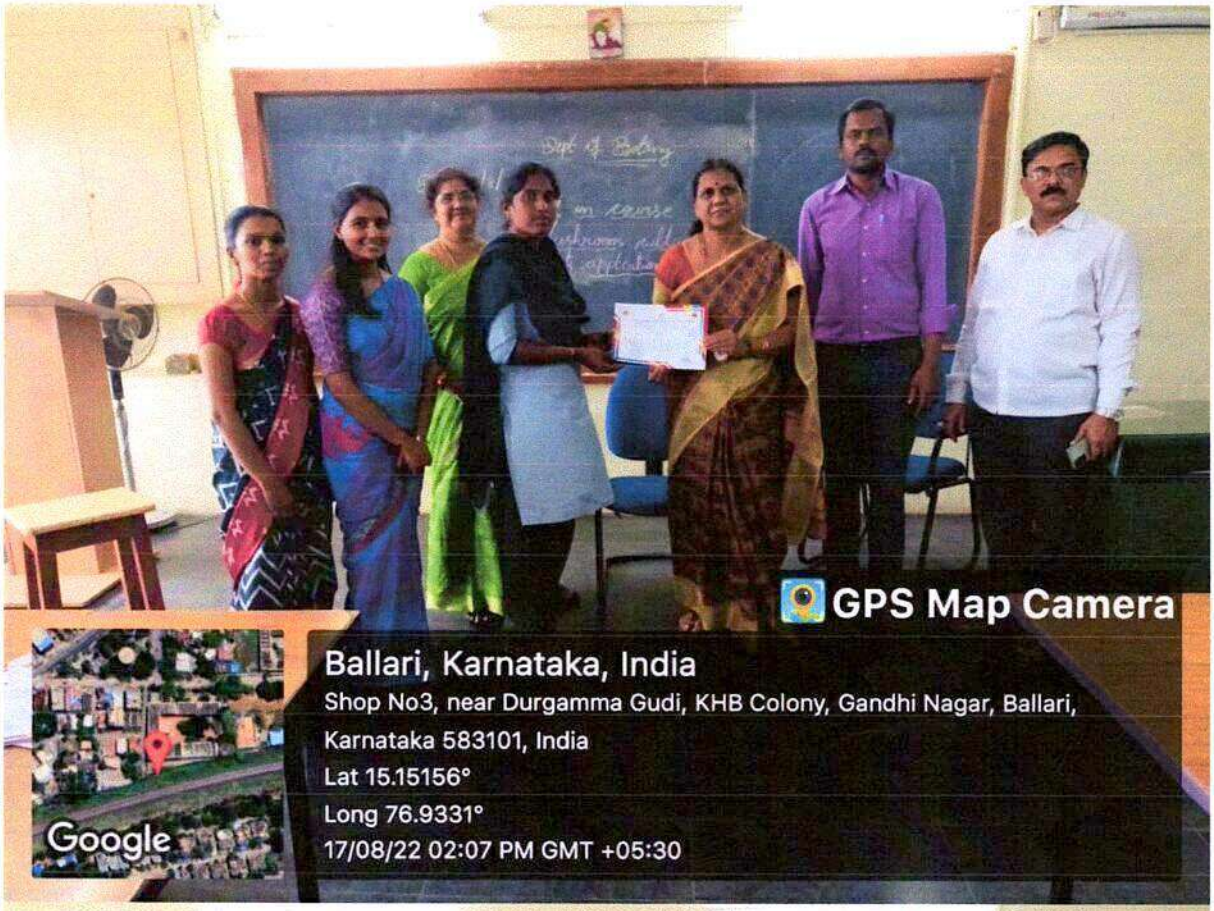
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Department of Botany

Course :- Nursery Management
Internal Assessment

Date: 23/11/23

Max marks:50M

I. Answer the following questions 5*1=5

1. Nursery
2. Raised bed
3. Seed treatment
4. Plant bio-regulation
5. Site selection

II. Answer the following questions **15*3=45**

1. Precautions to be taken during the preparation of nursery bed.
2. Nursery and its Importance.
3. Nursery bed and write precautions to be taken during preparation of nursery bed.

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V.V. Sangha's

Smt. A.S.M. COLLEGE FOR WOMENS, BALLARI.

INTERNAL TEST

Invigilator's Signature

Name of the Student: Sampreetha Class: 4th Sem

Seat No. ..... Reg. No. U1DAT21S0200 Subject : Nursery management

Date : 23/11/23. **Note : Supplements Shall not be provided.**

1) It is an area, in which new saplings are raised and nourished until they are ready for sale or transplanting at a permanent place in a field.

2) Raised bed is a such a nursery bed is prepared during the rainy season.
- The land is levelled and made free of weeds, stumps, stones, pebbles etc.
- The soil of the nursery bed is thoroughly mixed with 5-10 kg per sqm rotten farmyard manure.

3) Seed treatment is to keep the seeds free from pathogen, fungicides like Captan, thiram or Carbandazim are applied @ 2.5-3 g/kg seed, and mixed throughly on the seeds to disinfect the surface of the entire seed lot.

4) Plant bio-regulators
These are compounds that are organic in nature but other than nutrients. These promote, inhibit or otherwise modify physiological process in plants even when used in small amounts.

5) Pest managment:
It can be defined as the method of reducing or eliminating different types of unwanted creatures such as cockroaches, ants, wasps, bees etc from places occupied by humans.

6) Sit Selection:-
The location of nursery is very important factor. The place must be easily visible open sunny, unfree from food & water logging condition.

II

① Types of nursery.
Nurseries are classified on the basis of duration, plants produced and structures used.

On the basis of duration.
Temporary nursery.
This type of nursery is developed only to fulfill seasonal requirements or a targeted project. Such a nursery is, usually, small in size and is set up for a short period after which it is abandoned. Temporary nurseries are mostly used for raising seedling of vegetables and flower crops. Such nurseries are found near the main planting area.
Features:
- It is constructed for a short period and is small in size.
- Intensive manuring and fertilisation is not necessary in such a nursery as it is constructed at a site rich in humans.
- As it is located near a planting site, the distance b/w the nursery and the actual planting site is less.
- No major transportation is required, and if any, the cost is less.

Advantages:

- Mortality or injury due to shock lifting and transportation of seedling is negligible due to less distance b/w the nursery and actual planting site.
- Initial investment on a temporary nursery is less as compared to a permanent one.

Disadvantages:

- Because of its temporary nature, basic facilities like irrigation may not be adequate. Therefore, special arrangements need to be made in order to keep the plants and seedling in healthy condition.

Permanent nursery:

In this type of a nursery, the plants are nourished and kept for a longer period of time till they are sold out or planted permanently in a field.

Some of the important cultural operations carried out in the permanent nursery throughout the year are follows.

- It requires a large area and must be well connected by road.
- Such type of a nursery requires intensive management and supervision.

Advantages:

- Greater range of planting stocks, such as seedling, grafted plant, budded plants, etc are available.
- Being concentrated at one place, its supervision and management is better due to the availability permanent staff.
- The initial production cost is reasonable but profits go up in the long run.

Disadvantages.

- The initial investment cost is high.
- The transportation cost is more.
- It requires skilled human resource round the year.

3] Nursery & its importance.

- It is an area, in the which new saplings are raised and nourished until they are ready for sale or transplanting at a permanent place in a field,

Importance of nursery.

- It is possible to grow and maintain a large number of plants per unit area.
- Small and expensive hybrid seeds can be raised more effectively due to better care and mangement
- When seeds are sown in seed beds, their germination percentage increases and the vigour of the seedlings also improves.
- The mangement of of seedling can be done in a better way with minimum care, cost and maintenance as the nursery area is small.
- Manipulation of growing conditions for plants becomes easy.
- Better & uniform crop growth can be obtained in the main field by selecting vigorous and healthy seedlings.
- Off-season sowing of seeds becomes possible which ultimately results in fetching more returns
- The seed requirement of nursery raised crops is less as compared to direct seed sowing of the same crop due to better management.
- Management of insect-pests, diseases and weeds is easy in a nursery.

- Off-Season sowing of seeds becomes possible which ultimately results in fetching more returns.
- The seed requirement of nursery raised crops is less same crop due to direct seed sowing.
- Manipulation of growing conditions for plant becomes easy.
- Better & Uniform crop growth can be obtained in the main field by selecting vigorous and healthy seedlings.
- The mangement of seedling can be done in a better way with minimum care, cost and maintenance as the nursery area is small.
- It is an new area in the which new saplings are raised and nourished until they are ready for sale or transplanting.
- In case of water scarcity, this type of bed helps to conserve the moisture.
- The soil of the seedbed need to be sterilised by soil solarisation or with chemicals to avoid contamination by pests and diseases
- The soil of the nursery bed is thoroughly mixed with rotten farmyard manure
- This type of nursery bed is thoroughly mixed with rotten farmyard manure.
- In dry areas, the bed is kept 10-15 cm below the ground level, which helps in conserving water.
- When seeds are sown in seeds beds, the germination percentage increases and the vigour of the seedling also improves.
- Small and expensive hybrid seeds can be raised more effectively due to better care and management.

(2) Nursery Bed.

It refers to a land, which is made free from weeds, stumps, stones, pebbles, etc and it is used for sowing of seeds to raise seedlings and multiplication of different species of plant through asexual means.

Preparation of the nursery bed.

Nursery beds can be prepared in three different ways.

Sunken bed

- → The soil of the seedbed needs to be sterilised by soil solarisation or with chemicals to avoid contamination by pests and diseases.
- → The soil of the nursery bed is throughly mixed with rotten farmyard manure.
- → This type of nursery bed is prepared in dry and windy areas.
- → In dry areas, the bed is kept 10-15 cm. below the ground level, which helps in conserving water.
- → Sunken bed facilitates the deposition of irrigation water or rainwater for a longer time
- → In case of water scarcity, this type of bed helps to conserve the moisture.
- → Such a bed can be easily irrigated during dry season.
- → A sunken bed provides protection to the seedlings during high wind conditions as they are covered.

* level bed:

→ The soil of the seedbed must be sterilised by soil Solarisation or with Chemicals to avoid contamination by pests and diseases.
→ After soil preparation the recommended dose of manure and fertilisers is mixed in the nursery bed.
→ For efficient management, the whole area is divided into uniform size of small beds.
→ Usually, a flat bed is 1-metre wide and has length according to the slope of the field
→ Such a bed is prepared during non-rainy season (summer and winter) so that there is no water logging.
→ Adequate drainage provision is made and preference for sandy or sandy loam soil is given when preparing a flat bed.

* Raised Bed:

→ Such a nursery bed is prepared during the rainy season.
→ The land is levelled and made free of weeds, stumps, stones, pebbles, etc.
→ The soil of the nursery bed is thoroughly mixed with 5-10 kg per sqm rotten farmyard manure
→ A space of 3-4 cm is left b/w two beds in order to carry out culture practices smoothly
→ This type of bed is prepared about 15 cm high from the ground level. The width is kept at 1-1.5 m and length 3-5 m. This enables adequate drainage during rains and checks water

V.V. Sangha's

Smt. A.S.M. COLLEGE FOR WOMENS, BALLARI.

INTERNAL TEST

49/50

Invigilator's Signature

Name of the Student: Akshatha A.V Class: 4th Sem

Seat No. ..... Reg. No. U10AI21S0189 Subject : Nurser Management

Date : 23/11/2023 Note : Supplements Shall not be provided.

1) Nursery :- It is an area in which new saplings are raised and nourished until they are ready for sale or transplanting at a permanent place in a field

2) Raised Bed :- * Such a nursery Bed is prepared during the rainy season.
* The land is levelled & made free of weeds stups, stones, pebbles, etc.
* The soil of the nursery Bed is throughly mixed with 5 - 10 kg per sqm rotten farm - yard manure.

3) Seed Treatment :- To keep the seeds free from pathogens, fungicides like captan, thiram or carba - ndazim are applied @ 2.5 - 3g/kg seed. & mixed thoroughly in the seeds to disinfect the surface of the entire seed lot.

4) plant Bio - regulators :- These are compounds that are organic in nature But other than nutri - ents. These promote, inhibit or otherwise modify physiological processes in plants even when used in small amounts.

5) Pest management can be defined as the method of reducing or eliminating different types of unwan - ted creatures such as cockroaches, ants wasps.

6) Site selections :- The location of a nurs-ery is very important factor. The place must be easily visible, open, sunny & free from flood & water logging condi-tion.

(1) Nurseries are classified on the basis of duration, plants produced and structures used.

On the basis of duration :-

Temporary nursery.

This type of nursery is developed only to fulfil seasonal requirements of a targeted project. such a nursery is usually, small in size & is set up for a short period after which is it abandoned.

Features :-

* It is constructed for a short period & is small in size
* Intensive manuring & fertilisation is not necessary in such a nursery as it is constr-ucted at a site rich in humans.
* No major transportation is required. & if any the cost is less.
* Special supervision is not required in the maintenace of such a nursery. However, sec-urity aspects must be taken care of.

Advantages :-

* Mortality or injury due to shock of lifting and transportation of seedlings is negligible due to less distance between the nursery & actual planting site.
* Initial investment in a temporary nursery is less as compared to a permanent one.

Disadvantage :-

* Because of its temporary nature, Basic facilities like irrigation may not be adequate. Therefore, special arrangements need to be made in order to keep the plants & seedlings in healthy condition.

Permanent nursery :-

In this type of a nursery the plants are nourished & kept for a longer period of time till they are sold out or planted permanently in a field.
Some of the important cultural operations carried out in the permanent nursery throughout the year are as follows.

* It requires a large area & must be well connected by road.
* Such type of a nursery requires intensive management and supervision.
* High initial cost is involved in the establis

Advantages :-

* Being permanent in nature, it becomes a perpetual source for the supply of planting material for many years.
* Being concentrated at one place, its supervision & management is better due to the availability permanent staff.
* The initial production cost is reasonable but profits go up in the long run.

Disadvantages.

* The initial investment cost is high.
* The transportation cost is more
* Such a nursery needs intensive labour management.
* It requires skilled human resource round the year.

(3) Nursery :-

It is an area in which new saplings are raised and nourished until they are ready for sale or transplanting at a permanent place in a field. Raising of seedings in a nursery is important for various reasons.

Importance of Nursery :-

* It is possible to grow & maintain a large number of plants per unit area.

(2) Nursery Bed

It refers to a land, which is made free from weeds, stumps, stones, pebbles, etc. and is used for sowing of seeds to raise seedlings and multi-plication of different species of plants through asexual means.

Preparation of the nursery Bed.

Nursery beds can be prepared in three different ways.

Sunken bed :-

* The soil of the seedbed needs to be sterilised by soil solarisation or with chemicals to avoid contamination by pests & diseases.
* The soil of the nursery bed is throughly mixed with rotten farmyard manure.
* This type of nursery bed is prepared in dry & windy areas.
* such a bed can be easily irrigated during dry season.
* A sunken bed provides protection to the seedlings during high wind conditions as they are covered.

Level Bed :-

* The soil of the seedbed must be sterilised by soil solarisation or with chemicals to avoid contamination by pests & diseases.

* Small & expensive hybrid seeds can be sap-ed more effectively due to better care and management.
* When seeds are sown in seedbeds, their germination percentage increases & the vigour of the seedlings also improves.
* The management of seedlings can be done in a better way with minimum care, cost & maintenance as the nursery area is small
* manipulation of growing conditions for plants becomes easy.
* Off-season sowing of seeds becomes possible which ultimately results in fetching more returns.
* management of insect-pests, diseases & weeds is easy in a nursery.
* It is possible to grow & maintain a large number of plants per unit area.
* When seeds are sown in seedbeds, their germination percentage increases & the vigour of the seedlings also improves.
* manipulation of growing conditions for plants becomes easy.
* Off-season sowing of seeds becomes possible which ultimately results in fetching more returns.
* In case of water scarcity, this type of bed helps to conserve the moisture.
* The soil nursery bed is thoroughly mixed with rotten farmyard manure.
* Sunken bed facilitates the deposition of irrigation water or rainwater for a longer time.

* After soil preparation the recommended dose of manure & fertilisers is mixed in the nursery bed.
* For efficient management, the whole area is divided into uniform size of small beds.
* Usually, a flat bed is 1-metre wide area is has length according to the slope of the field.
* Such a bed is prepared during non-rainy season (summer & winter) so that there is no waterlogging.
* Adequate drainage provision is made & preference for sendy or sandy loam soil is given when preparing a flat bed.

<u>Raised Bed</u> :-

* Such a nursery Bed is prepared during the rainy season.
* The land is levelled and made free of weeds, stumps, stones, pebbles, etc.
* The soil of the nursery bed is throughly mixed with 5-10 kg per sqm rotten farmyard manure.
* This type of bed is prepared about 15cm high from the ground level. The width is kept at 1-15 cm & length 3-5 m. This enables adequate drainge during rains & checks water stagnation.

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

Certificate

V.V. Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

This is to certify that Ms. Sampreetha *of* IV *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Nursery Management" organized by the Department of Botany

in the academic year 2022-23.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator | **Head of the Department** | **Principal**

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Website: www.asmc.org Email: smtasmc@gmail.com

Certificate

V.V. Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

This is to certify that Ms. Ashatha . A.V *of* IV *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

" Nursery Management " organized by the Department of Botany

in the academic year 2022-23.

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Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

Course Coordinator **Head of the Department** **Principal**

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V V Sangha's, Smt. A.S.M. College for W BALLARI 583103.

V V Sangha's
Smt. ASM College for Women, Ballari
Department of Mathematics
Student enrolled list

Sl.No	Register Number	Name of the student	Signature
1.	U10AI21S0066	Anitha Dasar	
2.	U10AI21S0085	Netra	
3.	U10AI21S0107	Rohini	
4.	U10AI21S0103	Rashmi S	
5.	U10AI21S0279	Ayisha Nasreen	
6.	U10AI21S0277	Saba Kousar	
7.	U10AI21S0065	Anusha Herur	
8.	U10AI21S0068	Apoorva	
9.	U10AI21S0023	Ashwini P	
10.	U10AI21S0210	Uma	
11.	U10AI21S0149	Deepika L	
12.	U10AI21S0136	Bhagyashri.M	
13.	U10AI21S0192	Sai Keerthana k	
14.	U10AI21S0194	Sahana M	
15.	U10AI21S0283	Basavarajeshwari.M	
16.	U10AI21S0090	Veena B M	
17.	U10AI21S0209	Kavana	
18.	U10AI21S0248	K.Nethravathi	
19.	U10AI21S0229	Vishalakshi	
20.	U10AI21S0061	A Sudha	
21.	U10AI21S0296	Yashoda.N	
22.	U10AI21S0264	K S Roopa	
23.	U10AI21S0265	Meher Tasneem S	
24.	U10AI21S0272	Suvarna	
25.	U10AI21S0060	Afreen Begum	
26.	U10AI21S0153	Rajeshwari B	
27.	U10AI21S0096	Kavyashree	
28.	U10AI21S0138	H Netravathi	
29.	U10AI21S0153	Rajeshwari	
30.	U10AI21S0147	Priyanka M	

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SMT ASM COLLEGE FOR WOMEN, BALLARI
DEPARTMENT OF MATHEMATICS
ADMISSION APPLICATION FORM FOR ADD-ON COURS

Name of the student : AYISHA NASREEN

Register No : U10AI21S0279

Class : BSC 4th Semester.

Date of Birth : 13/03/2004

Community : 2B

Address : #3 ward No 26, TEACHERS COLONY. BELLARI

Contact No : 7353366922

Email ID : ayeshalubna66922@gmail.com

DECLARATION

I----------AYISHA NASREEN----------Would like to enrol in the ADD-ON COURSE on GRAPH THEORY. I shall abide by the rules and regulations of the college.

Date: 16/05/2023

Ayesha
Signature of the Candidate

(Course Co-ordinator)

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SMT ASM COLLEGE FOR WOMEN, BALLARI
DEPARTMENT OF MATHEMATICS
ADMISSION APPLICATION FORM FOR ADD-ON COURSE

Name of the student : VEENA B.M

Register No : U10AI21S0090

Class : B.Sc – IV Sem [PM].

Date of Birth : 15/10/2003

Community : III B

Address : LIG-238, K.H.B Colony, Gandhinagar, Housing Board, Moka Road, BALLARI - 583103

Contact No : 9741378440

Email ID : Veenabm1960@gmail.com

DECLARATION

I----------Veena B.M----------Would like to enrol in the ADD-ON COURSE on GRAPH THEORY. I shall abide by the rules and regulations of the college.

Date: 16/05/2023

Veena B.M
Signature of the Candidate

H. Chaitra
(Course Co-ordinator)

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Smt ASM College for Women, Ballari
Department of Mathematics
Add – on course Syllabus

Introduction, graphs, finite and null graphs. Connectedness and component, . The number ofνi =2νdeg Σdegree of vertex, minimum and maximum degree, vertices of odd degree is even. Isomorphism, complete graph, line graph, total graph.

20 hrs

Sub-graph, spanning and induced sub-graphs, walk, trail, path, cycle, the shortest path problems, bipartite graph. Characterization of bipartite graph in terms of its cycles.

10 hrs

References:

1. Robin J. Wilson: Introduction to Graph Theory, Longman (London), UK.
2. Narsing Deo: Graph Theory & Applications (PHI), India.
3. Frank Harrary: Graph Theory Narosa Publications, India.

Head of the Department of Mathematics
Smt. A.S.M. College for Women
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for Women. BELLARY

REGISTER OF ATTENDANCE & FEES

Name of the Institute .....

Addon Course - IV Sem

FOR THE MONTH OF 2022-2023

Section ..... Place .....

Sl. No.	Admission No. U10A12	NAMES	1 16/05	2 17/05	3 18/05	4 19/05	5 22/05	6 23/05	7 24/05	8 25/05	9 26/05	10 29/05	11 30/05	12 31/05	13 01/06	14 02/06	15 05/06	16 06/06	17 07/06	18 08/06	19 09/06	20 12/06	21 13/06	22 14/6	23 15/6	24 16/6	25 18/06	26 22/06	27 23/06	28 26/06	29 27/06	30 29/06	31 30/06	No. of days present	FEES Rs. P.	Date of payment
1	S0060	Afreen Begum	1	2	3	4	5	6	7	8	9	A	A	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
2	S0061	A. Sudha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
3	S0075	T Chandrika	1	2	3	4	5	6	A	7	8	9	10	11	12	13	14	15	A	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
4	S0090	Veena BM	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
5	S0111	Majula	1	2	A	3	4	5	6	7	A	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
6	S0149	Deepika L	1	2	A	A	3	A	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
7	S0192	Sai Keerthana K	1	2	3	4	5	A	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28					
8	S0194	Sahana M	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
9	S0209	Kavana	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
10	S0210	N Kavya	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
11	S0218	Bhagyashri M	1	2	3	4	5	6	7	A	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
12	S0229	Vishalakshi	1	2	A	3	4	5	6	7	8	9	A	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
13	S0248	K. Nethravathi	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
14	S0264	K S Roopa	1	2	3	4	5	A	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
15	S0265	Meher Jasneem S	1	2	3	4	5	A	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
16	S0272	Suvarna	1	2	3	4	A	5	6	7	A	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
17	S0279	Ayisha Nasreen	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
18	S0283	Basavarajeshwari M	1	2	3	4	A	5	6	A	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
19	S0296	Yashoda N	1	2	3	4	5	6	7	8	A	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
20	S0085	NETRA	1	2	3	4	5	A	6	7	A	8	A	9	10	11	12	A	A	13	14	15	A	16	17	18	19	20	21	22	A	23	A			
21	S0066	Anitha Dasar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	A	A	24	25	26	27	28	29			
22	S0107	Rohini	1	A	2	3	A	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	A	26	27	28			
23	S0033	Akshitha. J	A	1	2	3	4	5	A	6	7	8	9	A	10	A	11	12	13	A	14	15	16	17	A	18	19	A	20	21	22	23	24			
24	S0136	P. Swathi	1	2	3	A	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	A	21	22	23	24	25	26	A	27	28			
25	S0065	Anusha Hervi	1	2	3	4	5	6	7	8	A	9	10	11	12	13	14	15	16	17	A	18	19	20	21	22	23	24	25	26	27	28	29			
26	S0031	Ashwini. P	1	A	2	3	A	4	5	6	7	8	9	10	11	12	A	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
27	S0103	Rashmi. S	A	1	2	3	4	5	6	7	8	9	A	10	11	12	13	14	15	16	17	18	19	20	21	22	23	A	24	28	29	30				
28	S0123	Uma	1	2	A	3	4	A	5	A	6	7	8	9	A	10	11	12	A	13	14	15	16	17	18	A	19	20	21	22	23	24	25			
29	S0277	Sada kousar	A	1	2	A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	A	19	20	21	22	23	24	25	26	27	28			
30	S0068	Apoorva	1	2	3	4	A	5	6	7	8	A	A	9	10	A	11	A	12	13	14	A	15	A	16	17	A	18	A	19	20	A	A			
		Number present M / Daily E																																		
		Initial M / E	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO	HO			

No. on roll at the beginning of month.

No. Of Working days.

Average Attendance

Principal
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Smt. Allum Sumangalamma Memorial
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Smt.ASM College for Women,Ballari
Department of Mathematics
Addon Course Photos

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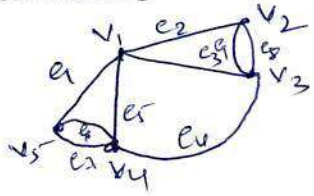
Department of Mathematics – 2022-23

Add-on Course Question paper **Max Marks:50**

1. Define Graph. Prove that in a graph the number of vertices of degree is even
2. Write down the degree sequene of the following

   a.



   b. Define Bipartite graph and complete Bipartite graph
3. Give an example of walk,trail,path and cycle
4. Prove that every cubic graph has even number of vertices
5. Define degree of vertex,Multigraph,closed walk,open walk, Pseudo Graph

H. Gauli

...d of the Department of Mathematics
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INTERNAL TEST

Invigilator's Signature

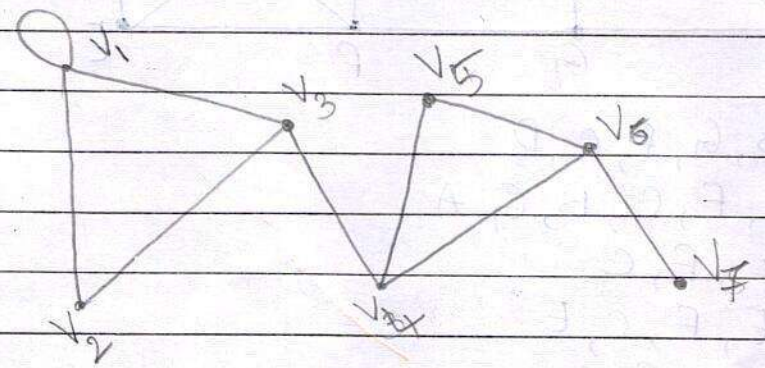
Name of the Student: VEENA B.M Class: B.Sc - IV Sem

Seat No. ..... Reg. No. U10AI21S0090 Subject : .....

Date : 30/06/2023 **Note : Supplements Shall not be provided.**

1. A Graph which contains a pair of set of vertices and edges which are unordered pair of vertices.

2.a)



Degree of the sequence for the given figure.

Degree $V_1 = 4$ Degree $V_5 = 2$

Degree $V_2 = 2$ Degree $V_6 = 3$

Degree $V_3 = 3$ Degree $V_7 = 1$

b) Bipartite Graph :-

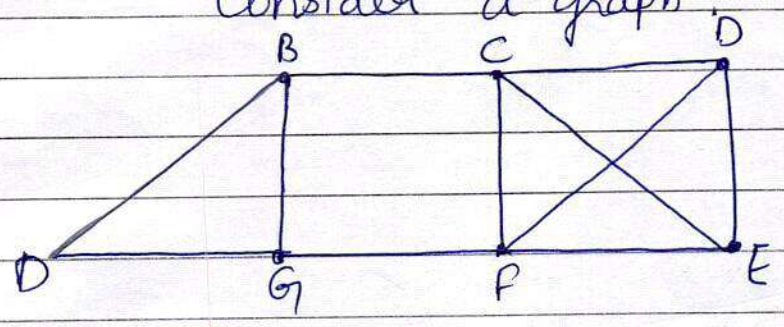
A Bipartite Graph also called a graph, is a set of graph vertices decomposed into two ~~distinct~~ disjoint sets such that no two graph vertices within the same set are adjacent.

Complete Bipartite Graph :-

A Complete Bipartite Graph is a special kind of bipartite graph where every vertex of the second set.

3. Example of walks:

Example 1: In this example, we will consider a graph.



1. A, B, G, F, C, D
2. B, G, F, C, B, G, A
3. C, E, F, C
4. C, E, F, C, E
5. A, B, F, A
6. F, D, E, C, B

for those sequences which are walk we have to also determine whether it is a cycle, path, circuit or Trail.

1. Sequence no 1 is a Trail because there is no repeated edges in the Sequences.

2. Sequence no 2 is a walk because the Sequence BGFCBGA Contains the repeated edges and vertices

3. Sequence 3 is a cycle because the Sequence CEFC does not Contain the repeated edges are Vertixes

4. Sequence no 4 is walk because the Sequence CEFCE contains repeated edges and Vertices.

5. Sequence no 5 is not a walk because Thus is no direct path to go from B to F. Thats why we can Say that the sequence ABFD is not a walk.

6. Sequence no 6 is a path because the Sequence FDECB does not Contain any repeated edges and Vertices.

4. Assume that V_1 be the vertices of a V_1 degree and V_2 be the vertices of odd degree is an graph $G=(V,E)$. Also assume that there m number of edges. Then we have the following Equation.

$$2m = \sum_{V \in V_0} deg(V) = \sum_{V \in V_1} deg(V) + \sum_{V \in V_2} deg(V)$$

Consider the Term $\sum_{V \in V_1} deg(V)$. It must be even, because for Each $V \in V_1$, the degree of V is even

even.

5. Degree of vertex:

Find the degree of by counting the number of edges which has that vertex as an endpoint.

Multigraph:-

Any graph which contain some multiples edges is called a Multigraph. In a multigraph, no loops are allowed. [A graph in which loops and multiple edges are allowed is called pseudograph.]

Pseudograph:

10

A pseudograph is a grap which loops and multiple edges can exist. A simple graph, on the other hand does not support loops or numerous edges.

Open walk:

If a walk starts and end at the same vertex then it is closed and if it starts and ends at different vertices then it is open.

Closed path:

If a walk starts and ends at the same

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INTERNAL TEST

32/50

Invigilator's Signature

Name of the Student: Ayisha Nasreen Class: BSC IV sem

Seat No. ..... Reg. No. U10AI21S0279 Subject : .....

Date : 30/06/2023 **Note : Supplements Shall not be provided.**

(4) Assume the term G be a graph with 'e' edges & 'n' vertices $v_1, v_2, v_3 \ldots v_n$ since each edge is incident on two vertices, its contributes 2 to the sum of degree of vertices in graph G.

$$\sum_{i=1}^{n} \text{degree}(v_i) = 2e$$

$$\sum_{i=1}^{n} \text{degree}(v_i) = \sum_{i=1}^{r} \text{degree}(v_i) + \sum_{i=r+1}^{n} \text{degree}(v_i)$$

$$\Rightarrow \sum_{i=1}^{n} \text{degree}(v_i) - \sum_{i=1}^{r} \text{degree}(v_i)$$

$$\Rightarrow \sum_{i=r+1}^{n} \text{degree}(v_i) \text{ is even}$$

But, the for $i = r+1, r+2, \ldots, n$ each $d(v_i)$ is odd. so, the number of terms in $\sum_{i=r+1}^{n} \text{degree}(v_i)$ must be even

10

In lucid words $(n-r)$ is even

Proved.

(5) Degree of vertex:

→ Find the ~~edge~~ degree by counting the number of edges which has that vertex as an end point

Multi graph

→ Any graph which contains some multiple edges is called a multigraph. In this no loops are allowed.

Open walk

→ If a walk starts and ends at the same vertex then it is closed.

Closed path:

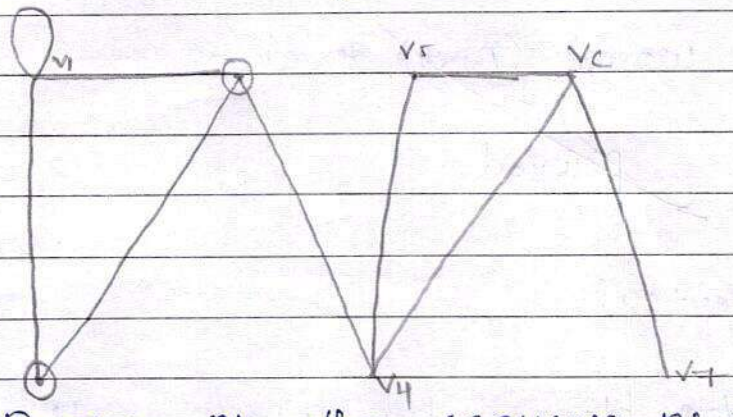
→ If a walk starts and ends at the same vertex then it is closed path.

Pseudograph

10

→ Is a graph which loops and multiple edges can exist. A simple graph on the other hand, does not support loops or numerous edges

(2)



Degree of the sequence of the given figure.

Degree $V_1 = 4$

Degree $V_4 = 3$
Degree $V_5 = 2$
Degree $V_6 = 3$
Degree $V_4 = 1$

b) A bipartite graph also called a graph is a set of graph vertices decomposed into two disjoint sets such that no two graph vertices within the same set are adjacent.

③ Given an example of walk, paths, Train and cycle

⇒ Sequence is not a walk because there is no direct path to go from B to F

⇒ Sequence no is a trail because there is no repeated edges in the sequence

⇒ walk because the sequence BGFCBGA contains the repeated edges & vertices

⇒ Sequence, walk because the sequence CEFCE contains repeated edges and vertices.

④ A graph which contains a pair of set of vertices and the edges which are unordered pairs of vertices.

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Gandhi Nagar, BALLARI-583103. Ph. 08392-256756

Website: www.asmc.org Email: smtasmc@gmail.com

Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. VEENA .B.M *of* IV *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Graph Theory" organized by the Department of Mathematics

in the academic year 2022-23.

H. Chaitra
Course Coordinator

H. Chaitra
Head of the Department

Principal
Principal
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
Sri Togari Veerappanavara Datti Avarana, Allum Sumangalamma Road ,
Gandhi Nagar, BALLARI-583103. Ph. 08392-256756
Website: www.asmc.org Email: smtasmc@gmail.com

Vv Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Certificate

This is to certify that Ms. AYISHA NASREEN *of* IV *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Graph Theory" organized by the Department of Mathematics

in the academic year 2022-23.

Course Coordinator	**Head of the Department**	**Principal**
IQAC, Co-ordinator Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103		Principal Smt. Allum Sumangalamma Memorial College for Women, Ballari-583103

Veerasaivavidyavardhaka sangha's, Ballari.
SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN
Sri TogariVeerappanavara Datti Avarana, GANDHI NAGAR, BALLARI-583103.
Recognised under section 2(f) and 12(B) of the UGC, Accredited by NAAC with B+ Grade
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura)
Website: www.asmc.org Ph.: 08392-256756: Email: smtasmc@gmail.com, iqacasmc@gmail.com

Veerasaiva Sangha's, Smt. A.S.M. College for Women BALLARI 583103.

Summary report of add on or value added year 2022-23

Name of the Course:**Graph Theory**
Course Co-Ordinator: Ms.Chaitra H S

Resource Person: Dr.V S Prabhaiah
Participants: 30 in nos.
Duration: 30 Days (30 theory classes of one hr each)
Focal Theme of the Course: Study of relationships connections through vertices and edges, exploring ,patterns ,paths,structures in graph for mathematical analysis and application.
Evaluation: Through Descriptive theory Exam (50 marks; 2hrs).
Result Details:
Nos. of Students enrolled the course: 30 in nos.
Nos. of Students Completed the Course: 30 in nos.

Outcomes:

- Network Analysis: Understanding complex relationships in social networks, communication, and transportation systems.
- Optimization: Solving real-world problems efficiently, like route planning and resource allocation.
- Computer Science: Graph algorithms underpin key processes, such as searching, sorting, and network protocols.
- Biology and Chemistry: Modeling molecular structures and biological interactions.
- Social Sciences: Analyzing connections in sociology, linguistics, and information dissemination.

****

Head of the Department of Mathematics
Smt. A.S.M. College for Women
Ballari - 583 103.

IQAC, Co-ordinator
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
Smt. Allum Sumangalamma Memorial College for Women
Gandhinagar, Ballari – 583103.
(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)
(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

Add- on course in UG Department of Botany

"Azolla Cultivation"

Programme outcome:

PO-1 Students can start small scale industry of Azolla Cultivation.
PO-2 Students study the Morphology and different azolla sp.
PO-3Enhance knowledge of students to use azolla as a biofertiliser.

Number of theory credits/week	Number of lecture hours/course	Number of practical credits/week	Number of practical hours/course
4	30	1	8

Content of theory course: Azolla Cultivation	30 hrs
Unit-I Introduction :- Historical development of azolla production, structure of azolla, classification of azolla, economis imoptance of azolla, azolla as biofertiliser, nutritional values of azolla, composition of azolla species, pit prepation for azolla cultivation.	10
Unit-II Cultivation Of Azolla :- Mass cultivation of azolla, requirements for the growth of azolla, factors affecting azolla growth, composition of media for azolla production, types of azolla sp., limitation of azolla culture.	10
Unit-III – Production of Azolla :- production of azolla in small scale and large scale, harvesting of azolla, packing and marketing. Azolla as a green manure, role of azolla in paddy field and use as bioremediators.	10

References :-

1.Biofertiliser Germplasm collections at "IRRI" by Watanabe, I., Roger, P.A., Ladha, J.K. and Van Hove, C.1992. Publications of IRRI.

2. Usaha Tani Terpadu PATI Published by Agromedia pustaka

Pedagogy: Lectures, practicals, participatory learning assessment etc.

1. To develop self employment skill in U G course.
2. To contrive skilled manpower in the field of life science.
3. To enhance students involvement in Agro industry.

Program Outcome:

PO-1 Students can start small scale industry of Azolla Cultivation.

PO-2 Students study the Morphology and different azolla sp.

PO-3Enhance knowledge of students to use azolla as a biofertiliser.

Number of theory credits/week	Number of lecture hours/course	Number of practical credits/week	Number of practical hours/course
4	30	1	8

Finalization of Approval

1. Launching of Add-on course in UG Dept. Of Botany is approved by all the members unanimously.
2. The Curriculum and Syllabus of "**Azolla Culitvation**" 30 hours Add-on course in UG department Botany and guidelines 2022- 23, released by UGC are recommended by the panel members.
3. The suggestions/corrections pointed out by the members will be intimated for taking into considerations.

Chairman of the Department & BOS

Dr. Bheemanagouda N. Patil

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany

Internal expert, BOS

Dr.Ravindra B.K.

External Expert, BOS

Dr. V S Bheemaredddy

External Expert, BOS

Dr.Shubhas Emmi

Member BOS

Mrs. Shubha V.H.M
Ms.Pallavi P.
Ms. Sushma V.H.

Formative assessment	
Assessment Occasion/type	**Weight age in marks**
Practical (IA)	10
Theory (IA)	10
Assessment	30
Total	**50**

Chairman of the Department & BOS

Dr. Bheemanagouda N. Patil

Dr. Bheemanagouda N Patil
M.Sc.,Ph.D.
Assistant Professor
HOD of Botany

Internal expert, BOS

Dr. Ravindra B.K.

External Expert, BOS

Dr. V. S. Bheemareddy

External Expert, BOS

Dr. Shubhas Emme

Member BOS

Mrs. Shubha V.H.M.
Miss. Pallavi P.
Miss. Sushma V.H.

Smt. Allum Sumangalamma Memorial College for Women

Department of Botany

Add on course on **"Azolla Cultivation"**

Student enrolment list 2022-23

Sl. NO	Name of the Students	Reg. No	Signature
1	Swapna P	S2013401	Swapna P
2	Lakshmi Parvathi K	S2013301	Lakshmi Parvathi.K
3	B Nethra	S2013225	B Nethra
4	G Lavanya	S2013263	G Lavanya
5	P S Sushma	S2013333	P S Sushma
6	Bhoomika S	S2013242	Bhoomika S
7	Sunanda	S2013399	Sunanda
8	Shyamala Desai	S2013388	Shyamala Desai
9	Makam Netravathi	S2013314	M Netravathi
10	G Asrita	S2013273	G. Asrita
11	Shravani PVN	S2013382	Shravani PVN
12	M Bhagya	S2013304	M. Bhagya
13	N Ruthika	S2013320	N. Ruthika
14	Anantalakshmi M T	S2013213	Anantalakshmi
15	Deepa T	S2013255	Deepa T
16	H Divya Bharathi	S2013274	Bharathi
17	H M Chaitra	S2013275	H.M. Chaitra
18	Kausar	S2013296	Kausar
19	Sahana B	S2013357	Sahana B
20	Nazmin Taj	S2013327	Nazmin Taj
21	Bodam Keerthi	S2013233	Bodam Keerthi
22	N Likitha	S2013321	N. Likitha
23	Shruthi H	S2013384	Shruthi H
24	M Akhila	S2013319	M. Akhila
25	Sudha K	S2013396	Sudha
26	K.H. Pushpavathi	S2013290	Pushpa

Course Coordinator

HOD of Botany

Principal

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
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(Accredited by NAAC with 'B+' Grade in Third Cycle)
Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

DEPARTMENT OF BOTANY

ADD-ON COURSE ADMISSION APPLICATION FORM
AZOLLA CULTIVATION

Name of the student : K. H. PUSHPAVATHI

Register No : S2013290

Class : B.Sc IIIrd year

Date of Birth : 25-06-2002

Community : IIIrd B

Address : Kengl, Raichur, Sindhanur

Contact No : 9019882350

Email ID : pushpavathi@2019kh@gmail.com

DECLARATION

I K. H. PUSHPAVathi Would like to enrol in the ADD-ON COURSE on **"AZOLLA CULTIVATION"**. I shall abide by the rules and regulations of the college.

Signature of the Candidate

Date: 30/6/23

(Course-Co-ordinator)

(Principal)

Office: 08392-256756, Fax: 257624.
BELLARY, V.V.SANGHA'S
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Website: www.smtasmc.org, E-mail:, smtasmc@gmail.com
Estd.: 1969

DEPARTMENT OF BOTANY

ADD-ON COURSE ADMISSION APPLICATION FORM
AZOLLA CULTIVATION

Name of the student : Sudha. K

Register No : S2013396

Class : B.Sc III rd year

Date of Birth : 17/01/2002

Community : Kuruba (2A category)

Address : S.P circle ballari

Contact No : 7204860755

Email ID : Sudharsudhak24@gmail.com.

DECLARATION

I---Sudha. K---Would like to enrol in the ADD-ON COURSE on **"AZOLLA CULTIVATION"**. I shall abide by the rules and regulations of the college.

Date: 30/6/23

Signature of the Candidate

(Course-Co-ordinator)

(Principal)

ADD ON COURSE

REGISTER OF ATTENDANCE & FEES

Name of the Institute ASM college for Women

FOR THE MONTH OF 2022 2023

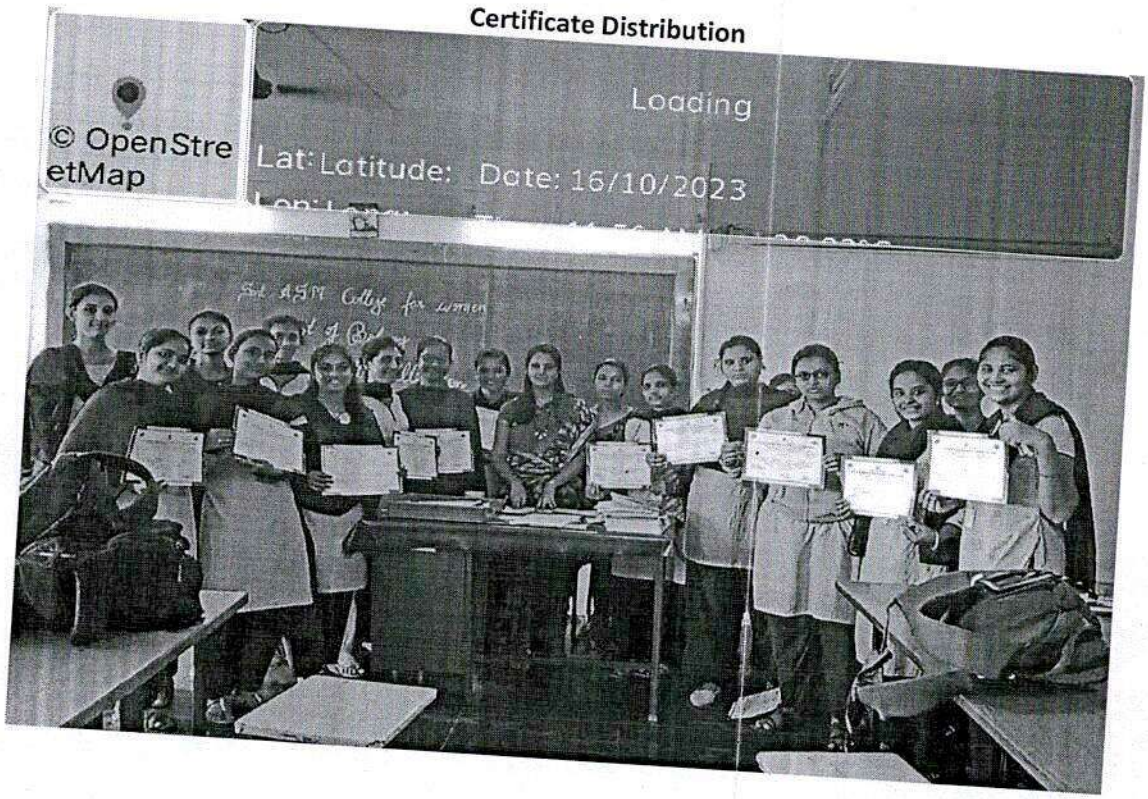
Section B.Sc VI Sem Place Ballari

SL NO	Admission No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No.of days present	FEES Rs.	FEES P.	Date of Payment
1		Sudha. K	1	2	3	0	4	5	0	6	7	0	8	9	10	11	12	13	14	15	16	17	18	19	20	21	0	22	23	24	25	26					
2		B. Nethra	1	2	0	3	4	5	6	0	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	0	23	24	25	26	27					
3		K.H Pushpavathi	1	2	3	4	0	0	5	6	7	8	9	10	0	11	12	13	14	15	16	17	18	19	20	21	22	0	23	24	25	26					
4		G Lavanya	1	2	3	4	5	0	6	7	0	8	0	9	10	11	12	13	14	15	16	17	18	19	20	21	0	22	23	24	25	26					
5		P.S. Sushma	1	2	0	3	4	5	6	7	8	9	10	0	11	12	13	14	15	0	16	17	0	18	19	20	21	22	23	24	0	25					
6		Bhoomika. S	1	2	3	4	5	6	0	0	7	8	9	10	11	0	12	13	14	15	0	16	17	18	19	20	21	22	23	24	25	26					
7		Shyamala Desai	1	2	3	4	5	0	6	7	8	9	10	0	0	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27					
8		Makam Nethravathi	0	1	2	0	3	4	0	5	6	7	8	9	10	11	0	12	13	14	15	16	17	18	19	20	21	22	0	23	24	25					
9		G. Asrita	1	2	0	3	4	5	6	7	8	9	10	11	12	13	14	0	15	16	17	0	18	19	20	21	0	22	23	24	25	26					
10		Shravani PVN	1	2	3	4	0	5	0	6	7	8	9	10	11	12	13	14	15	16	0	17	18	19	20	21	22	0	23	24	25	0					
11		Lakshmi parvathi. K	1	2	3	4	5	6	7	8	0	9	0	10	11	12	0	13	14	15	16	17	18	19	20	0	21	22	23	24	25	26					
12		M. Bhagya	1	2	0	3	4	5	6	7	8	0	9	10	0	11	12	13	14	15	16	0	17	18	19	20	21	22	0	23	24	25					
13		N. Ruthika	1	2	3	0	4	5	6	7	8	9	0	0	10	11	12	13	14	0	15	16	17	18	19	20	21	0	22	23	24	25					
14		Anantalakshmi. M.T	1	2	3	0	4	5	0	6	7	8	9	10	11	12	13	0	14	0	15	16	17	18	19	20	21	22	0	23	24	25					
15		Deepa. T	0	1	2	3	0	4	5	6	7	8	9	10	11	0	12	13	14	15	16	17	18	0	19	20	21	22	23	24	25	26					
16		H. Divya Bharathi	1	2	3	4	5	6	0	7	8	9	10	11	12	13	0	14	0	15	16	17	18	19	0	20	21	0	22	23	0	24					
17		H.M. Chaitra	1	2	3	4	0	5	6	7	0	8	9	10	11	12	13	14	0	15	16	17	0	18	19	0	20	21	22	0	23	24					
18		Kausar	1	2	0	0	3	4	5	6	7	8	0	9	10	11	12	13	14	15	0	16	17	18	19	0	20	21	22	23	24	25					
19		Sahana. B	0	1	2	3	4	5	6	7	0	8	0	9	10	11	12	13	14	0	15	16	17	18	19	20	21	22	0	23	24	0					
20		Nazeentaj	1	2	3	4	0	5	0	6	7	0	8	9	10	0	0	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
21		Swapna. P	1	2	3	4	0	0	5	6	7	0	8	9	10	11	12	13	14	15	16	0	17	18	19	20	21	0	22	23	24	25					
22		Sunanda	1	2	0	3	4	5	0	6	7	8	9	10	11	12	13	0	14	15	16	17	18	19	20	21	22	23	24	25	26	27					
23		N. Likhita	0	1	0	2	3	4	5	0	6	7	8	9	10	0	11	12	13	14	15	16	17	18	0	19	20	21	22	0	23	24					
24		Shruthi. H	1	2	3	4	5	0	0	6	7	8	9	0	10	0	11	0	12	13	14	15	16	17	18	19	20	21	22	23	24	25					
25		Mylavarapu Akhila	1	2	3	4	0	5	6	7	0	8	9	10	11	12	13	14	0	15	16	17	18	19	0	20	21	0	22	23	0	24					
26		Bolam Keerthi	0	1	2	3	4	5	0	6	7	0	8	9	10	11	12	13	14	15	0	16	17	18	17	20	21	22	0	23	24	25					
		Number Present Daily M	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
		Number Present Daily E																																			
		Initials M																																			
		Initials E																																			

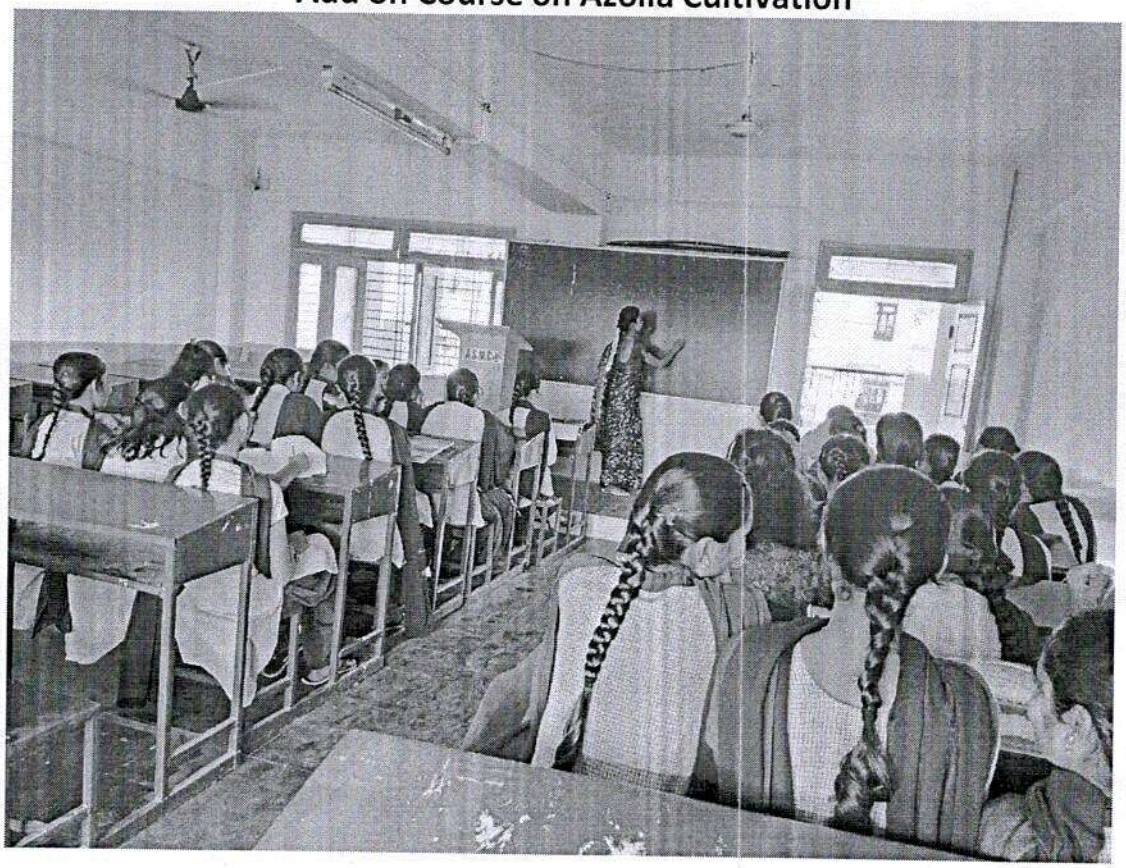
Principal
Smt. Allum Sumangalamma Memorial
College for Women, Ballari-583103

No. on roll at the beginning of month Admitted

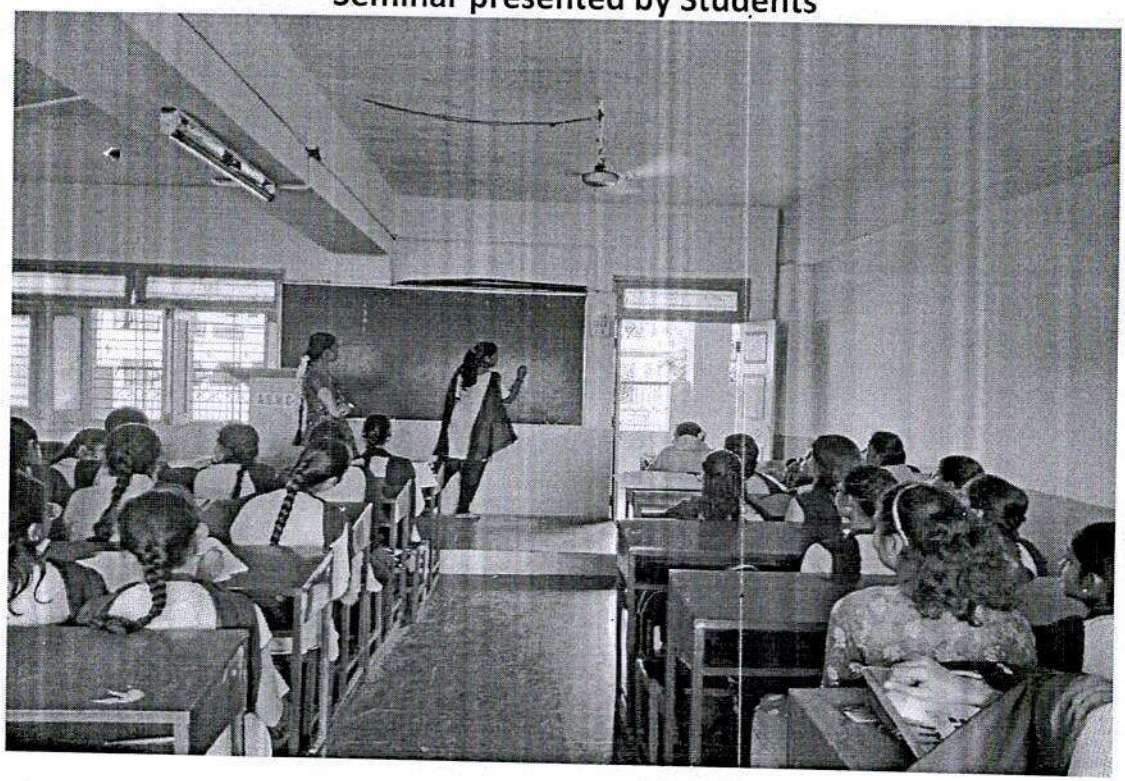
Certificate Distribution



Add on Course on Azolla Cultivation



Seminar presented by Students



Smt. Allum Sumangalamma Memorial College for Women

Gandhinagar, Ballari – 583103.

Department of Botany

Course :- Azolla Cultivation

Internal Assessment

Date: 3/8/23

Max marks:50M

I Answer the following questions 5x2=10

1. Is Azolla feed for Animals?
2. In which crops azolla is mostly used?
3. Why azolla is used as biofertilizer?
4. What nutrients are in azolla?
5. Which fertilizer is best for azolla?

II Answer the following questions 10x4=40

6. Explain the scientific reason for growing Azolla pinnata in rice field.
7. Write a note on Azolla cultivation.
8. Economic importance and advantages of Azolla Cultivation.
9. What are factors affecting Azolla Cultivation.

V.V. Sangha's

Smt. A.S.M. COLLEGE FOR WOMENS, BALLARI.

INTERNAL TEST

40/50

Smt. A.S.M. College for Women BALLARI 583103. V.V. Sangha's

Invigilator's Signature

Name of the Student: Swapna. P Class: BSC (CBZ) VI Sem

Seat No. 80 Reg. No. S2013401 Subject : BOTANY

Date : Note : Supplements Shall not be provided.

1. Is Azolla feed for Animals?

→ Azolla was found to be a very nutritive and cheap organic feed substitive for dairy cattle, Azolla is rich in protiens almost 20-25% upon dry weight basis. It is also found to contain essential minerals like Iron, calcium, magnesium, phosphorous, copper, magnese.

2. In which crops Azolla is mostly used?

→ As Azolla serves as a green fertilizers for Almost all staple crop plants. It is chiefly used in the cultivation of rice. The primary reason being paddies (or) rice fields are one of the few plants. Azolla thrives and grows and provides. Nitrogen to the growing rice.

3. Why Azolla is used as Biofertilizers?

→ Biofertilizers are the Organisms that enrich soil Nutrient quality. Azolla is used as a bio-fertilization because it possess a symbiotic association with Nitrogen fixing cyanobacteria.

4. What Nutrients are in Azolla?

→ Azolla is very rich in proteins, essential amino acids vitamins (vitamin A, vitamin B_{12}, Beta carotene) Growth promoter in term edians.

and minerals including calcium, phosphorous, potassium, ferrous, copper, Magnesium.

5) Which fertilizers is best for Azolla?

→ When it comes to requirements of Nutrient. Azolla absorbs the Nutrients from water and phosphorous is most important element usually 20 to 25 ppm of phosphorous in the water is optimen. It is also essential to apply micro nutrients which can improve the multiplication and growth of Azolla.

5M

1. Explain the scientific reason for growing Azolla pinnate in a rice field?

→ Azolla pinnate is a species of fern known by several common names including mosquito fern feathered mosquito fern and water velvet. It is Native to much of Africa, Asia and parts of Austrilia. It is an Aquatic plant, It is found floating upon the surface of the water bodies because swift currents and waves breaks up the plant. At maximum growth rate, it can double its biomass in 19 days with most strains attaining such growth within a week under optimal condition.

A pinnate is a small fern with a triangular stem measuring up to 2.5 centimeters in length that floats on the water. They are green, blue, dark red in

V.V. Sangha's

Smt. A.S.M. COLLEGE FOR WOMENS, BALLARI

INTERNAL TEST

42/50

Smt. A.S.M. College for Women, BALLARI 583103. V.V. Sangha's

Invigilator's Signature

Name of the Student: Lakshmi Parvathi. K Class: BSc (CbZ) VI th sem

Seat No. 37 Reg. No. S2013301 Subject : Botany

Date : Note : Supplements Shall not be provided.

1. Is Azolla feed for Animals?

→ Azolla was found to be a very nutritive and cheap organic feed substitute for dairy cattle, Azolla is rich in protien almost 20-25% upon dry weight basis. It is also found to contain essential minerals like Iron, Calcium, magnesium, phosphorous, copper, magnese.

2. In which crops Azolla is mostly used?

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3. Why Azolla is used as Bio fertilizers?

→ Biofertilizers are the organisms that En rich soil Nutrient Quality. Azolla is used as a bio fertilization because it possess a symbiotic association with Nitrogen fixing cyanobacteria.

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→ Azolla is very rich in protiens, Essential amino acids vitamins (vitamin A, vitamin B_{12}, Beta carotene) Growth promoter intermediates

& minerals including Calcium, phosphorous, potassium, ferrous, copper, Magnesium

5) which fertilizers is best for Azolla?

→ when it comes to requirement of Nutrients Azolla absorbs the Nutrients from water and phosphorous is most important Element usually 20 to 25 ppm of phosphorous in the water is optimem. It is also Essential to apply micro Nutrients which can improve the Multiplication and Growth of Azolla.

5M:-

1) Explain the Scientific reason for growing Azolla pinnate in a rice field?

→ Azolla pinnata is a Species of fern known by several common names including mosquito fern feathered mosquito fern & water Velvet. It is Native to much of Africa, Asia and parts of Australia. It is an aquatic plant, it is found floating upon the Surface of the Water bodies because swift Currents and waves breaks up the plant At maximum growth rate, it can double its biomass in 19 days with Most Strains attaining Such growth within a week under Optimal Condition

A pinnate is a Small fern with a triangular Stem measuring up to

on the water. They are green, blue, dark red in colour and coated in tiny hairs giving them a velvety appearence. The hairs make the top surface of the leaf water, repellent keeping the plant even after being pushed under

2) Azolla Cultivation:-

→ well it is nothing but a free floating water fern consisting a short branched floating stem bearing roots which hang down in the water. It's kind of green fodder grown on water surface. Because Azolla has many Nutrient benefits when compared to other fodders. Apart from this it has Nature of fixing Nitrogen in rice crop field. This is the region. The Azolla is being used as common bio-fertilizer and green manure in rice fields. The blue-green algal grow in symbiotic association with this fern and are responsible for Nitrogen fixation in the rice crop where can it be grown well it can be cultivated in ponds, ditches and rice fields of warm temperature & tropical regional throughout the world.

Azolla fodder is an excellent alternate feed supplement for liverstock. poultry & rich This is a boon for dairy farmers because it drastically reduces the feed cost and result in increased milk yield Through there are many species of Azolla

A pinnata is popular among those when it comes to Nutrient value. Azolla passes high protien content amino acid vitamins, Minerals. Azolla posses high protien content Amino

giving them a velvet appearence. The hairs make the top surface of the leaf water, repellent keeping the plant even after being pushed under.

2. Azolla cultivation:

→ Well it is nothing but a free floating water fern consisting a short branched floating stem bearing roots which long down in the water. Its kind of green fodder grown on water surface. Because Azolla has many Nutrient benefits when compared to other fodders. Apart from this it has nature of fixing Nitrogen in rice crop yield. This is the region. The Azolla is being used as common bio-fertilizer and green manure in rice fields. The blue-green algal grow in symbiotic association with this fern and are responsible for nitrogen fixation in the rice crop where can it be grown well it can be cultivated in ponds, ditches and rice fields of warm temperature and tropical regional throughout the world.

Azolla fodders is an excellent alternate feed supplement for livestock poultry and rich. This is a boon for dairy farmers because it drastically reduces the feed cost and result in increased milk yield Through there are many species of Azolla.

A pinnata is popular among those when it comes to Nutrient value. Azolla passes high protein content amino acid vitamins, Minerals. Azolla posses high protein

10/5

Veerasaiva Vidyavardhaka Sangha

SMT. ALLUM SUMANGALAMMA MEMORIAL COLLEGE FOR WOMEN

(Affiliated to Karnataka State Akkamahadevi Women's University, Vijayapura.)

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Certificate

This is to certify that Ms. P. S. Sushma *of* VI *Semester,*

Smt. A.S.M. College for Women, Ballari has successfully completed Add on Course on

"Azolla Cultivation" organized by the Department of Botany

in the academic year 2022-23.

IQAC, Co-ordinator
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Course Coordinator	Head of the Department	Principal

PRINCIPAL
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Veerasaiva Vidyavardhaka Sangha

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Principal

SUMMARY

Azolla is a small-leaf floating fern, which contains an endosymbiotic community living in the dorsal lobe cavity of the leaves. The presence in this cavity of nitrogen-fixing filamentous cyanobacteria - Anabaena azollae - turns this symbiotic association into the only fern-cyanobacteria association that presents agricultural interest by the nitrogen input that this plant could introduce in the fields. In this work, we review the applications and future challenges of the use of Azolla as biofertiliser in Africa. In this continent, agriculture is the most important sector of economy and it employs 75 % of the labour force. The dwelling of fossil fuel reserves and the increasing costs of commercial nitrogen fertilisers implicate finding other alternatives, such as the use of biofertilisers, like the Azolla-Anabaena symbiotic system. This plant is quite spread in the African continent. The taxonomy of Azolla is reviewed and the results of the cooperation project between Portugal and Guinea-Bissau for the use of this aquatic fern as green manure on rice cultivation are analysed. Finally, we focus the importance of the use of nitrogen-fixing organisms, like Azolla, which could help effectively developing countries to improve more sustainable agriculture, without the risk of problems associated with the adverse effects of chemical fertilisers on long term soil fertility, soil productivity and environmental issues.