



24525

B.C.A. V Semester Degree Examination, February/March - 2023**.NET FRAME WORK USING C#****Paper : 5.5****Time : 3 Hours****Maximum Marks : 80****Instructions to Candidates :**

- 1) **ALL** questions are compulsory in section-A.
- 2) Answer any **FIVE** full questions in section-B.
- 3) Explain with proper diagram wherever necessary.

SECTION - A**I. Answer the following questions.****(10×2=20)**

- 1) Expand FCL.
- 2) Define Object.
- 3) Define Framework in C#.
- 4) What is Flow Control?
- 5) What is exception in C#?
- 6) State any one difference between C# and C++.
- 7) What is polymorphism?
- 8) Define Generic Classes.
- 9) What is Sorting?
- 10) What is Looping?

SECTION - B**II. Answer any FIVE of the following questions.****(5×12=60)**

1. a) Explain CLR architecture of .NET framework. With neat diagram. **(10)**
b) What is Array? **(2)**
2. a) Explain the features of C# in detail. **(10)**
b) Expand JIT. **(2)**
3. a) Explain constructors and destructors with a suitable example. **(10)**
b) What is Menustrip? **(2)**
4. a) Write a C# program to create a function to calculate the sum of the individual digits of a given number. **(6)**
b) Explain method overriding with an example. **(6)**

[P.T.O.]



- 5. a) Explain list in C# in detail. (6)
 - b) Explain briefly Boxing and Un-Boxing in C#. (6)

 - 6. a) Explain exceptional handling with appropriate example. (6)
 - b) Explain Menustrip with menu item in C# briefly. (6)

 - 7. a) Explain Decision making statement in C# with example in detail. (10)
 - b) Define Enumerator in C#. (2)
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24522

B.C.A V Semester Degree Examination, February/March - 2023
COMPUTER APPLICATIONS

Computer Graphics

Paper: 18BCA 5.2

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. **Part-I: Answer All 10 questions.**
2. **Part-II: Answer any 5 full questions.**

PART - I

Answer **ALL TEN** questions. Each carries **2** marks.

(10×2=20)

1. a) What is Pixel?
- b) What is Frame buffer?
- c) Define Mid-Point algorithm for generating circle.
- d) What is Soft-fill?
- e) Define Rotation.
- f) What is Co-ordinate System?
- g) What do you mean by 3D-transformation?
- h) Define View-Port.
- i) What is Projection?
- j) Expand: i) LED ii) LCD.

[P.T.O.]



(2)

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PART - II

Answer any **FIVE** full questions, each carries **12** marks.

(5×12=60)

2. a) Explain Raster and Random scan with diagram. (8)
b) Explain the Graphic functions. (4)
 3. a) Discuss the applications of Computer Graphics. (8)
b) Briefly explain Shadow-Mask Method with diagram. (4)
 4. a) Explain Bresenham's line drawing Algorithm. (8)
b) Explain the properties of Circle. (4)
 5. a) Explain Matrix Representation and Homogeneous Co-ordinates. (8)
b) Briefly explain basic transformations. (4)
 6. a) Explain area-clipping using Sutherland-Hodgeman procedure. (8)
b) Explain briefly Scan-line method. (4)
 7. a) Explain backspace removal by dept buffer method. (8)
b) Explain briefly shading model. (4)
 8. a) Explain color model. (8)
b) Explain Polygon table. (4)
 9. Write short notes on: (3×4=12)
 - a) Clipping
 - b) Aspect ratio and refresh rate.
 - c) Plasma-Panel display.
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24524(New)

B.C.A. V Semester Degree Examination, February/March - 2023

COMPUTER APPLICATION (NEW)

Advanced Java Programming

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Question No.1 is Compulsory.
2. Answer any FIVE full questions.

PART - A

I. Answer the following questions.

(10×2=20)

1. Define Adapter classes.
2. What is Servlet?
3. What is JSP?
4. What is session object in JSP?
5. List the types of JDBC drivers.
6. What is Cookie?
7. Define Metadata.
8. What is Embedded SQL?
9. What is JLabel?
10. Define Result set.

PART - B

II. Answer any FIVE full questions.

(5×12=60)

1. a) Explain basic JSP tags. (6)
b) Explain JSDK. (6)
2. a) Explain life cycle of servlet. (6)
b) Explain the types of driver managers. (6)

[P.T.O.]



(2)

24524(New)

3. a) Explain the attributes of applet tag. (6)
b) Explain the life cycle of an applet. (6)
 4. a) Explain JDBC process to connect to a database. (6)
b) Write a JSP program to find factorial of given number. (6)
 5. a) Differentiate between JSP and Servlet. (6)
b) Explain JTabbedPane and JComboBox. (6)
 6. a) Differentiate between JDBC and ODBC. (6)
b) Explain the architecture of JDBC. (6)
 7. a) Write a program to implement keyboard events. (6)
b) Explain any two Swing components. (6)
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24523

B.C.A. V Semester Degree Examination, February/March - 2023
COMPUTER APPLICATION
Cyber Security
Paper : 18BCA 5.3

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates :

- 1) Part-A: **ALL** questions are compulsory.
- 2) Part-B: Answer any **5** questions.

PART - A

ALL questions are compulsory.

(10×2=20)

1. Define cyber security.
2. What is meant by smishing?
3. Define password cracking.
4. Write any two examples of worms.
5. Define digital forensics.
6. What are the cellular networks?
7. Expand and define IPR.
8. What is Trojan Horse?
9. What do you mean by cyber crime?
10. Define keylogged and classify them.

PART - B

Answer any **FIVE** questions.

(5×12=60)

11. a) Mention kinds of attacks possible on mobile/cell phones. Explain with examples. **(6)**
b) Explain mobile devices, security implications for organisations. **(6)**
12. a) Explain password cracking and its classifications. **(6)**
b) Discuss the functions of backdoor and few examples of backdoor Trojans. **(6)**
13. a) What is DOS and DDOS attacks? Explain how to protect from DOS and DDOS attacks? **(6)**
b) Explain about digital forensic life cycle. **(6)**

[P.T.O.]



- 14. a) Discuss the challenges in computer forensics. (6)
 - b) Explain the relevance of the OSI 7 layer model to computer forensics. (6)

 - 15. a) Explain briefly the cost of cybercrime and IPR issues. (6)
 - b) Explain the importance of smartphone forensics and i-Phone forensics. (6)

 - 16. a) Explain forensics best practices for organizations. (6)
 - b) What are toolkits for Hand-Held device forensics? (6)

 - 17. a) Write a short note on web threats for organisation. (6)
 - b) Write short notes on social media marketing. (6)
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B.C.A. V Semester Degree Examination, February/March - 2023

COMPUTER APPLICATION

Cyber Security

Paper : 18BCA 5.3

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates :

- 1) Part-A: **ALL** questions are compulsory.
- 2) Part-B: Answer any **5** questions.

PART - A

ALL questions are compulsory.

(10×2=20)

1. Define cyber security.
2. What is meant by smishing?
3. Define password cracking.
4. Write any two examples of worms.
5. Define digital forensics.
6. What are the cellular networks?
7. Expand and define IPR.
8. What is Trojan Horse?
9. What do you mean by cyber crime?
10. Define keylogged and classify them.

PART - B

Answer any **FIVE** questions.

(5×12=60)

11. a) Mention kinds of attacks possible on mobile/cell phones. Explain with examples. **(6)**
b) Explain mobile devices, security implications for organisations. **(6)**
12. a) Explain password cracking and its classifications. **(6)**
b) Discuss the functions of backdoor and few examples of backdoor Trojans. **(6)**
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b) Explain about digital forensic life cycle. **(6)**

[P.T.O.]

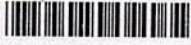


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 - b) Explain the relevance of the OSI 7 layer model to computer forensics. (6)

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 - 16. a) Explain forensics best practices for organizations. (6)
 - b) What are toolkits for Hand-Held device forensics? (6)

 - 17. a) Write a short note on web threats for organisation. (6)
 - b) Write short notes on social media marketing. (6)
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BCA V Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Computer Network

Time : 3 Hours

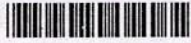
Maximum Marks : 80

Instructions to Candidates:

Answer any 5 full questions out of **EIGHT** questions.

1. a) Which are the popular uses of Internet for home users? (2)
b) Write short note on Time Division multiplexing. (6)
c) Drawing diagram explain ISDN system Architecture for office use. (8)
(2+6+8=16)
2. ~~a)~~ What is Unicasting? (2)
~~b)~~ Give difference between OSI reference model and TCP/IP reference model. (6)
~~c)~~ Explain Go-back-N protocol. (8)
(2+6+8=16)
3. a) What is Hamming distance? (2)
b) Explain Adaptive tree walk protocol. (6)
c) Explain finite state machine model for protocol verification. (8)
(2+6+8=16)
4. a) State Optimality principle. (2)
b) Write short note on slotted ALOHA (6)
c) Explain ATM reference model (8)
(2+6+8=16)

[P.T.O.]



5. a) What do you mean by congestion in Network? (2)
b) Explain store and forward packet switching. (6)
c) Explain TCP segment header. (8)
(2+6+8=16)
6. a) What is a Modem? Which are the different kinds of Modulation? (2)
b) Write short note on circuit switching. (6)
c) Explain shortest path routing. (8)
(2+6+8=16)
7. a) Which are the two approaches to flow control? (2)
b) Write a short note on polynomial codes. (6)
c) Explain Leaky bucket Algorithm with diagram. (8)
(2+6+8=16)
8. a) What are Jitters? (2)
b) Write a short note on CSMA/CD (6)
c) Give comparison between datagram subnet and virtual circuit subnet. (8)
(2+6+8=16)
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B.C.A. V Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Internet Programming

Paper-502

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

Answer any **FIVE** full questions.

- I.** a) Why Java is strongly typed language? (2)
b) Write a note on Java Environment. (8)
c) Explain data types in Java. (6)
(2+8+6=16)
- II.** a) Explain public static void main (String args []). (4)
b) Explain JVM and JDK. (8)
c) Explain for loop along with its additional features. (4)
(4+8+4=16)
- III.** a) Explain method overriding with an example. (8)
b) List the difference between overloading and overriding. (4)
c) Explain the following terms
i) Abstract classes and methods.
ii) Final. (4)
(8+4+4=16)

[P.T.O.]



- IV.** a) Write a program to find area of triangle and area of circle using interface. (8)
b) Mention advantages of packages. List and explain API packages. (8)
(8+8=16)
- V.** a) Mention the two ways that the thread can be created. (2)
b) Write a note on try, catch, throw and finally. (8)
c) What is Exception? Explain any 10 exception types and its causes. (6)
(2+8+6=16)
- VI.** a) How applet differs from application. (2)
b) What is an applet? Explain the life cycle of an applet. (6)
c) Write a program to create student report using applet, read the input using textboxes and display the output using buttons. (8)
(2+6+8=16)
- VII.** a) Explain visibility control in Java. (6)
b) Write a program to display numerical values using Applets. (4)
c) What is stream? Explain its classification. (6)
(6+4+6=16)
- VIII.** a) Explain the methods to draw ellipse and rectangular with example. (6)
b) Explain different ways to implement polygons. (6)
c) Write a program to pass parameters to applets from HTML tags. (4)
(6+6+4=16)
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B.C.A. V Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Database Management System

Paper - 503

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

Answer any FIVE full questions.

1. a) Define DBMS. (2)
b) Define transaction. Explain the properties of transaction. (6)
c) Write a short note on join operations. (8)
(2+6+8=16)
2. a) Explain the characteristics of database approach. (4)
b) Explain any four aggregate functions with example. (4)
c) Explain rules to map ER diagram to table with example. (8)
(4+4+8=16)
3. a) Discuss participation constraints. (4)
b) Explain cardinality ratio for binary relationship with example. (6)
c) Discuss BCNF with example. (6)
(4+6+6=16)
4. a) Define normalization. (2)
b) Write a short note on key constraints. (6)
c) Discuss strict 2 phase locking for concurrency control. (8)
(2+6+8=16)
5. a) Explain any 4 arithmetic functions with example. (4)
b) Explain SELECT statement with proper syntax. (6)
c) Write a short note on data independence. (6)
(4+6+6=16)

[P.T.O.]



6. a) Define data model. (2)
b) Explain DDL statements with proper syntax and example. (6)
c) Write a short note on deadlock for concurrency control. (8)
(2+6+8=16)
7. a) Define candidate key and super key. (4)
b) Write a short note on Hashing Technique. (4)
c) Explain Recoverable and Unrecoverable schedules with example. (8)
(4+4+8=16)
8. a) Explain ER diagram notations. (4)
b) Discuss hardware description of disk devices. (4)
c) Define attributes and discuss its types. (8)
(4+4+8=16)
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**B.C.A. V Semester Degree Examination, Nov./Dec. - 2018****COMPUTER APPLICATION****Database Management System****Paper - 503**

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:Answer any **FIVE** full questions.

1. a) Define DBMS. (2)
b) Define transaction. Explain the properties of transaction. (6)
c) Write a short note on join operations. (8)
(2+6+8=16)
2. a) Explain the characteristics of database approach. (4)
b) Explain any four aggregate functions with example. (4)
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c) Discuss strict 2 phase locking for concurrency control. (8)
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b) Explain SELECT statement with proper syntax. (6)
c) Write a short note on data independence. (6)
(4+6+6=16)

[P.T.O.]



6. a) Define data model. (2)
b) Explain DDL statements with proper syntax and example. (6)
c) Write a short note on deadlock for concurrency control. (8)
(2+6+8=16)
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c) Explain Recoverable and Unrecoverable schedules with example. (8)
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b) Discuss hardware description of disk devices. (4)
c) Define attributes and discuss its types. (8)
(4+4+8=16)
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**B.C.A. V Semester Degree Examination, Nov./Dec. - 2018****COMPUTER APPLICATION****Software Engineering****Paper - BCA 504**

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer any **FIVE** full questions.
2. Each question carries **equal** marks.

- I.** a) Define Software Engineering. (2)
b) Explain Boehm's spiral model with neat diagram. (8)
c) Define software products and its types. (6)
(2+8+6=16)
- II.** a) Explain system requirements definition and system design. (8)
b) Explain requirements of engineering process. (8)
(8+8=16)
- III.** a) Write a note on non-functional requirements. (8)
b) Explain incremental development. (6)
c) What is work-product? (2)
(8+6+2=16)
- IV.** a) Explain design quality. (8)
b) Explain the client - server model. (8)
(8+8=16)

[P.T.O.]



- V. a) Explain data flow design. (8)
b) Explain information presentation. (8)
(8+8=16)
- VI. a) Explain fault avoidance and fault tolerance. (8)
b) Explain software development for reuse. (6)
c) What are the software activities? (2)
(8+6+2=16)
- VII. a) Explain bottom - up testing and thread testing. (8)
b) Explain testing process. (8)
(8+8=16)
- VIII. a) Explain COCOMO model. (6)
b) Explain process quality assurance. (6)
c) Explain the problems which arise during system installation. (4)
(6+6+4=16)
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B.C.A. V Semester Degree Examination, Nov./Dec. - 2018

COMPUTER APPLICATION

Operation Research

Paper - BCA-505

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer any FIVE full questions.
2. Students are allowed to use non-scientific calculators.

- I. a) Define Slack and Surplus variables. (4)
b) Write the procedure for mathematical formulation of LPP. (4)
c) Solve the following LPP by graphical method.

$$\text{minimize } z = 20x_1 + 10x_2$$

$$\text{subject to } x_1 + 2x_2 \leq 40$$

$$3x_1 + x_2 \geq 30$$

$$4x_1 + 3x_2 \geq 60$$

$$x_1, x_2 \geq 0$$

(8)

- II. a) Explain Big-M method. (6)
b) Use Penalty method to solve

$$\text{min } z = 4x_1 + 2x_2$$

$$\text{subject to } 3x_1 + x_2 \geq 27$$

$$x_1 + x_2 \geq 21$$

$$x_1, x_2 \geq 0$$

(10)

- III. a) A paper mill produces two grades namely X and Y. Because of raw material restrictions it cannot produce more than 400 tons of grade X and 300 tons of grade Y in a week. There are 160 production hours in a week. It requires 0.2 and 0.4 hours to produce a

[P.T.O.]



ton of products X and Y respectively with corresponding profits of Rs.200 and Rs.500 per ton formulate the above as a LPP to maximize profit and find out the optimum product mix. (6)

- b) Use simplex method to solve the following LPP

$$\begin{aligned} \max z &= 10x_1 + 6x_2 \\ \text{subject to } x_1 + x_2 &\leq 2 \\ 2x_1 + x_2 &\leq 4 \\ 3x_1 + 8x_2 &\leq 12 \\ x_1, x_2, x_3 &\geq 0 \end{aligned} \quad (10)$$

- IV. a) What is transportation problem? Explain NWCR method. (8)

- b) Find the initial solution to the following Tp by VAM.

	D ₁	D ₂	D ₃	D ₄	Supply
O ₁	11	13	17	14	250
O ₂	16	18	14	10	300
O ₃	21	24	13	10	400
Demand	200	225	275	250	950

(8)

- V. a) Write the procedure for Hungarian method. (8)

- b) Using the following cost matrix determine

- i) Optimal job assignment.
ii) The cost of assignment.

		Jobs			
		1	2	3	4
Machines	m ₁	5	7	11	6
	m ₂	8	5	9	6
	m ₃	4	7	10	7
	m ₄	10	4	8	3

(8)

- VI. a) Write the procedure for determine the critical path. (4)

- b) Define critical path. (2)



- c) A project consists of a series of task labelled A, B,.....H, I. With the following constraints $A < D, E; B, D < F; B < H; C < G; F, G < I$. $W < x, y$ means x and y cannot start until W is completed You are required to construct a network using this notation. Also find the minimum time of completion of the project when the time of completion of each task is given below as follows.

Task	A	B	C	D	E	F	G	H	I
Time	23	8	20	16	24	18	19	4	10

(10)

- VII. a) Solve the game problem graphically

	Player B	
	1	2
Player A	5	4
	-7	9
	-4	-3
	2	1

(10)

- b) Solve the following payoff matrix Also determine the optimal strategy and value of the game

	B	
	5	1
A	3	4

(6)

- VIII. Write short notes on:

(4×4=16)

- a) Maxmin-minmax principle.
- b) Assignment problem.
- c) Dominance method.
- d) Matrix-minima method.

of track is given below:

Also find the minimum time of flight when the angle of projection is 45° .

You are asked to find the range of the projectile when the angle of projection is 45° .

For a projectile launched at an angle θ to the horizontal with an initial velocity u , the range R is given by:

$$R = \frac{u^2 \sin(2\theta)}{g}$$

where g is the acceleration due to gravity.

Time	0	1	2	3	4	5	6	7	8	9	10
Height	0	1	4	9	16	25	36	49	64	81	100

(10)

Time	0	1	2	3	4	5	6	7	8	9	10
Height	0	1	4	9	16	25	36	49	64	81	100

(10)

Also find the minimum time of flight when the angle of projection is 45° .

(10)

(10)

- (a) Minimum time of flight
- (b) Maximum range
- (c) Minimum range
- (d) Minimum time of flight