

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV : : SUMMER - 2022

SUBJECT : COMPUTER NETWORKS

Day : Tuesday
Date : 24-05-2022

S-18777-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N. B. :

- 1) **Q. No. 4 is COMPULSORY.**
- 2) Answer ANY **TWO** questions from Q. 1, 2, 3 in Section – I.
- 3) Answer ANY **TWO** questions from Q. 5, 6, 7 in– II.
- 4) Figures to the right indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SAME** answer book.
- 6) Draw neat and labelled diagrams **WHEREVER** necessary.

SECTION – I

- Q. 1** Answer the following: (12)
- a) Explain various network topologies with their merits and demerits in brief.
 - b) Discuss the concept of FDM in detail.
- Q. 2** Answer the following: (12)
- a) Explain the term:
 - i) Static routing
 - ii) Dynamic routing
 - iii) Direct routing
 - b) What is wireless sensor networks? Give the application of it.
- Q. 3** Answer the following: (12)
- a) Explain in brief about DNS.
 - b) With an example, explain the link state routing protocol.
- Q. 4** Write short notes on **ANY THREE** of following: (12)
- a) IP v6
 - b) Telnet
 - c) ISDN
 - d) Bandwidth
 - e) Extranet

SECTION – II

- Q. 5** As network administrator, you are assigned task of designing local area network for small firm having 150 computers. Give the minimum requirement to build this network. Which topology you will prefer? Why? (12)
- Q. 6** Describe OSI network architecture model in detail. (12)
- Q. 7** Find the class of each IP address given below. Give suitable explanation for each answer. (12)
- i) 114.34.12.8
 - ii) 127.126.125.8
 - iii) 242.34.54.15
 - iv) 232.34.2.1

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV : : SUMMER - 2022

SUBJECT : SOFTWARE TESTING

Day : Thursday
Date : 26-05-2022

S-18778-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) Q4 from Section I is COMPULSORY.
 - 2) Answer ANY TWO questions from Q 1, 2, 3 in Section I.
 - 3) Answer ANY TWO questions from Q 5, 6, 7 in Section II.
 - 4) All question CARRY EQUAL marks.
 - 5) Answers to Both the sections should be written in SAME answer book.
 - 6) Draw a labeled diagram WHEREVER necessary.
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SECTION - I

Q.1) Answer the following: (6 Marks X 2 = 12)

- a) Describe members involved in software development.
- b) Differentiate between verification and validation.

Q.2) Answer the following: (6 Marks X 2 = 12)

- a) Explain V-testing model. State its advantages and disadvantages.
- b) What is Validation testing? Discuss alpha and beta testing in detail.

Q.3) Explain the following: (6 Marks X 2 = 12)

- a) How to do a testing of client server architecture? Discuss in detail.
- b) Explain unit testing in detail.

Q.4) Write short notes on the following: Attempt ANY THREE (4 Marks X 3 = 12)

- a) Software Testing Process
- b) Testing Patterns
- c) Testing of Real Time Systems
- d) Control Structure Testing
- e) Equivalence partitioning
- f) Goals of Testing

SECTION - II

Q.5) Answer the following: (6 Marks X 2 = 12)

- a) Explain Basis Path testing technique.
- b) Explain the process of debugging with the suitable diagram.

Q.6) Answer the following: (6 Marks X 2 = 12)

- a) Explain Security Testing in brief.
- b) What is Integration testing? Differentiate between bottom up integration and top down integration.

Q.7) Explain the following: (6 Marks X 2 = 12)

- a) Differentiate between White Box and Black Box testing techniques.
- b) Define the term Risk. How testing plays an important role in Risk Management?

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV : : SUMMER - 2022

SUBJECT : JAVA PROGRAMMING

Day : Saturday
Date : 28-05-2022

S-18779-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N. B. :

- 1) **Q. NO. 4** from Section – **I** is **COMPULSORY**.
 - 2) Attempt **ANY TWO** questions from **Q. 1, 2, 3** in Section – **I**.
 - 3) Attempt **ANY TWO** questions from **Q. 5, 6, 7** in Section – **II**.
 - 4) Figures to the right indicate **FULL** marks.
 - 5) Answers to both the sections should be written in **SAME** answer book.
 - 6) Draw neat and labelled diagrams **WHEREVER** necessary.
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SECTION – I

- Q. 1** a) Explain Java features in detail. (06)
- b) What is looping? Describe for loop and while loop with example. (06)
- Q. 2** What is Synchronization? Why it is necessary? Explain with example. (12)
- Q. 3** a) What is method overloading? Explain it with suitable example. (06)
- b) What is inheritance? Explain single inheritance in detail. (06)
- Q. 4** Write short notes on **ANY THREE** of the following : (12)
- a) Garbage Collection
- b) AWT Components
- c) Packages
- d) Types of Streams
- e) Exception Handling

SECTION – II

- Q. 5** What is an interface? How to implement the concept of multiple inheritance using interfaces? (12)
- Q. 6** a) Describe different stages in the life cycle of an applet. (06)
- b) Write a Java program to print sum of digits of a given number. (06)
- Q. 7** Write a program to define a class employee having members with empno, name, basic salary, DA is 5 % of Basic Salary, HRA is 10 % of Basic Salary, Professional tax is Rs. 200 and calculate Gross Salary for an employee. Write all necessary methods accordingly. (12)

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV :: SUMMER - 2022

SUBJECT : OPERATIONS RESEARCH

Day : Tuesday

Date : 31-05-2022

S-18780-2022

Time : 10:00 AM-01:00 PM

Max. Marks : 60

N.B.:

- 1) Question 4 from Section I is compulsory.
- 2) Answer ANY TWO questions from Q. 1, 2, 3 in Section I.
- 3) Answer ANY TWO questions from Q. 5, 6, 7 in Section II.
- 4) All questions CARRY EQUAL marks.
- 5) Answers to Both the sections to be written in SAME answer book
- 6) Draw a labeled diagram WHEREVER necessary

SECTION - I

Q.1) Answer the following: (12 Marks X 1 = 12 Marks)

Explain different phases of Operations Research.

Q.2) Answer the following: (12 Marks X 1 = 12 Marks)

Solve the following LPP graphically.

Maximize $Z=40x_1+80x_2$

Subject to Constraints

$$2x_1 + 3x_2 \leq 48$$

$$x_1 \leq 15$$

$$x_2 \leq 10$$

$$x_1, x_2 \geq 0$$

Q.3) Answer the following: (12 Marks X 1 = 12 Marks)

Find Initial basic Feasible solution by using Least Cost Method and Vogel's Approximation Method.

To \ From	P	Q	R	Supply
A	6	8	1	50
B	3	4	7	40
C	4	8	2	60
Demand	20	95	35	150

Q.4) Answer the following: Attempt ANY THREE (4 Marks X 3 = 12 Marks))

- a) Characteristics of Operations Research
- b) Slack and Surplus variables in LPP
- c) Vogel's Approximation Method (VAM)
- d) Restricted Assignment Problem
- e) Programme Evaluation and Review Technique(PERT)
- f) Laplace Criterion

SECTION - II

Q.5) Answer the following (12 Marks X 1 = 12 Marks)

Solve the following assignment problem, where no assignments can be made of job A to Machine a.

<div>From \ To</div>	a	b	c	d	e
A	-	4	7	3	4
B	4	2	6	3	4
C	7	6	5	7	5
D	3	3	7	6	7
E	4	4	5	7	3

Q.6) Answer the following (12 Marks X 1 = 12 Marks)

The following table lists the jobs of a network along with their time estimates (days)

Job	Optimistic time	Most likely time	Pessimistic time
1-2	1	1	7
1-3	1	4	7
1-4	2	2	8
2-5	1	1	1
3-5	2	5	14
4-6	2	5	8
5-6	3	6	15

- i) Calculate expected duration of each activity
- ii) Draw Network diagram
- iii) Find Critical path and Project completion time

Q.7) Answer the following (12 Marks X 1 = 12 Marks)

A business has two independent investment decisions A and B available to him, but he lacks the capital to undertake both of them simultaneously. He can choose A first and then stop, or if A is not successful, then take B or vice versa. The probability of success of A is 0.7, while for B it is 0.4. Both investment schemes require an initial capital outlay of Rs. 2,000 and both return nothing, if the venture is unsuccessful. Successful completion of A will return Rs. 3,000 (over cost) and successful completion of B will return 5,000(over cost). Draw decision tree and determine the best strategy.

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV : : SUMMER - 2022

SUBJECT : ENTREPRENEURSHIP DEVELOPMENT

Day : Thursday

Date : 2/6/2022

S-18781-2022

Time : 10:00 AM-01:00 PM

Max. Marks : 60

N.B.:

- 1) **Q.4** is **COMPULSORY** from Section – I.
 - 2) Attempt **ANY TWO** questions from **Q.1** to **Q.3** from section – I
 - 3) Attempt **ANY TWO** questions from **Q.5** to **Q.7** from section - II
 - 4) Figures to the right indicate **FULL** marks.
 - 5) Answer to both sections should be written in **SAME** answer book.
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SECTION-I

- Q.1** Explain the concept of entrepreneurship. What is the role of an entrepreneur in the Economic Development of a Nation? [12]
- Q.2** What are the various ways in which entrepreneurs can identify business ideas? [12]
- Q.3** What are the different schemes launched by Government of India to promote entrepreneurship? [12]
- Q.4** Write short note on **ANY TWO**: [12]
- a) Qualities of an Entrepreneur
 - b) MUDRA Finance
 - c) Environmental Analysis

SECTION-II

- Q.5** What is an Entrepreneurship Development program (EDP)? State the importance of an EDP. [12]
- Q.6** Explain the contents of business plan. Write business plan to set up Digital Gadget production unit. [12]
- Q.7** List and elaborate the types of Entrepreneurs. State suitable examples in your answer. [12]

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