

**BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)**

**B.C.A. Sem-IV : WINTER- 2022**

**SUBJECT : COMPUTER NETWORKS**

Day : Monday

Time : 02:00 PM-05:00 PM

Date : 28-11-2022

**W-18777-2022**

Max. Marks : 60

**N.B.**

- 1) Question. 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 Section-II.
- 4) Answer to both the sections should be written in **SAME** answer book.
- 5) Figures to the **RIGHT** indicates **FULL** marks.
- 6) Draw a labeled diagram **WHEREVER** necessary.

**SECTION I**

- Q.1** a) Differentiate between: Guided transmission media and unguided transmission media. (06)
- b) Explain the terms: (06)
- i) Bandwidth
  - ii) Throughput
  - iii) Sub-netting
- Q.2** a) Explain the switching techniques in brief. (06)
- b) Discuss shortest path routing protocol in detail. (06)
- Q.3** a) What is token? Explain token concept in brief. (06)
- b) Describe design issues for wireless sensor networks. (06)
- Q.4** Write Short Notes on **ANY THREE** of the following: (12)
- a) Client-Server Architecture
  - b) MANET
  - c) Fiber optics
  - d) Ethernet
  - e) Jitter control

**SECTION II**

- Q.5** a) What are the advantages of using UDP over TCP? (06)
- b) Explain the functionalities of transport layer? (06)
- Q.6** a) What are the differences between Unicasting, Multicasting and Broadcasting. (06)
- b) Differentiate between IPV4 and IPV6 addressing schemes. (06)
- Q.7** ABC organization has decided to build a local area network of 200 computers. (12)  
As a network administrator, Give the minimum requirement to build this network. Which topology will you prefer? Why?

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**BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)**

**B.C.A. Sem-IV : WINTER- 2022**

**SUBJECT : SOFTWARE TESTING**

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 30-11-2022

**W-18778-2022**

Max. Marks : 60

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**N.B.**

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
  - 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
  - 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 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.
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**SECTION – I**

- Q.1** a) Explain various approaches involved in Integration Testing. (06)  
b) Which are different Verification Techniques? Explain. (06)
- Q.2** Differentiate between the following : (12)  
i) Black Box Testing and White Box Testing  
ii) Testing and Debugging.
- Q.3** Define ‘Software Testing’? Explain various phases of Software Testing Process. (12)
- Q.4** Write short notes on **ANY THREE** of the following : (12)  
a) Testing Patterns  
b) Unit Testing  
c) SDLC  
d) Graph Based Testing  
e) Testing of Client Server Architecture

**SECTION – II**

- Q.5** What is Risk? Explain various types of Risks. (12)
- Q.6** What is Real Time System? Explain any two testing types for it. (12)
- Q.7** Explain need of System Testing. What do you mean by Performance Testing? (12)

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**BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)**  
**B.C.A. Sem-IV : WINTER- 2022**  
**SUBJECT : JAVA PROGRAMMING**

Day : Friday

Time : 02:00 PM-05:00 PM

Date : 2/12/2022

**W-18779-2022**

Max. Marks : 60

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**N.B :**

- 1) **Q. 4 from Section I is COMPULSORY.**
  - 2) Solve **ANY TWO** from **Q.1 to Q.3** in **Section – I.**
  - 3) Solve **ANY TWO** from **Q.5 to Q.7** in **Section – II.**
  - 4) All questions **CARRY EQUAL** marks.
  - 5) Answers to both sections should be written in **SAME** answer book.
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**SECTION - I**

- Q.1** List and describe features of java. (12)
- Q.2** What do you know about constructor? Explain its types with example. (12)
- Q.3** What is applet? Illustrate applet life cycle in detail. (12)
- Q.4** Write short note on **ANY THREE** of the following: (12)
- a) Garbage collection in java
  - b) Class and object
  - c) Packages
  - d) Types of streams
  - e) Thread synchronization

**SECTION - II**

- Q.5** What is inheritance? Explain multilevel inheritance with suitable example. (12)
- Q.6** a) Write a java program to calculate sum of squares of first 10 numbers. (06)
- b) Write a java program to print whether any three digit number is Armstrong or not. (06)
- Q.7** a) Explain the following AWT control: (06)
- i) Scroll Bar                      ii) Button                      iii) Textfield
- b) Design a class employee with appropriate fields and methods to print employee personal details. (06)

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**BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)**  
**B.C.A. Sem-IV : WINTER- 2022**  
**SUBJECT : OPERATIONS RESEARCH**

Day : Monday

Time : 02:00 PM-05:00 PM

Date : 5/12/2022

W-18780-2022

Max. Marks : 60

**N.B.**

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
- 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
- 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 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.

**SECTION – I**

**Q.1** Define Operations Research. Explain the different applications of Operations Research in brief. (12)

**Q.2** In a textile sales emporium four salesmen A, B, C and D are available for four counters W, X, Y and Z. each salesman can handle any counter. The service time (in hour) at each counter when managed by each salesman is given here. How should the salesmen be allocated to appropriate counters so as to maximize the service time ? (Each salesman must handle only one counter.) (12)

Counter	Salesman			
	A	B	C	D
W	39	72	43	52
X	22	32	49	65
Y	27	39	60	51
Z	45	50	48	52

**Q.3** Find the optimum solution of following LPP by Graphical Method. (12)

Maximize  $Z = 7x_1 + 3x_2$

Subject to :

$$2x_1 + 5x_2 \geq 20$$

$$3x_1 + 4x_2 \geq 12$$

$$x_1, x_2 \geq 0$$

**Q.4** Write short notes on **ANY TWO** of the following : (12)

- a) Decision tree
- b) Limitations of Operations Research
- c) Degeneracy in Transportation Problem

PTO

## SECTION – II

- Q.5** A food product company is contemplating the introduction the introduction of a new product with new packing to replace the existing product at higher price ( $A_1$ ) or Moderate increase ( $A_2$ ) or negligible increase in sales ( $S_1$ ), No change in sales ( $S_2$ ) and decrease in sales ( $S_3$ ). The marketing department of the company worked out the pay off in terms of yearly new profits for each of the strategies. The expected sales are represented as below : (12)

Strategies	Pay off in lakh Rs. States of nature		
	$S_1$	$S_2$	$S_3$
$A_1$	7	3	1.5
$A_2$	5	4.5	0
$A_3$	3	3	3

Which is Maximin strategy and Maximax strategy?

- Q.6** For the following project details (12)

Activity	(1-2)	(1-3)	(1-4)	(2-3)	(3-4)	(2-6)	(3-5)	(3-6)	(4-5)	(5-6)	(6-7)
Duration in weeks	3	5	7	8	2	4	3	2	3	5	6

- Draw Network Diagram
- Find earliest and latest times
- Find critical path and total project duration.

- Q.7** Find I.B.F.S. of following transportation problem by (12)

- N.W.C.R.
- V.A.M.
- L.C.M.

Sources	Destination				Availability
	D1	D2	D3	D4	
S1	5	4	3	6	50
S2	2	5	4	2	40
S3	3	1	2	1	20
Demand	25	30	35	20	110

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**BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)**

**B.C.A. Sem-IV : WINTER- 2022**

**SUBJECT : ENTREPRENEURSHIP DEVELOPMENT**

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 7/12/2022

**W-18781-2022**

Max. Marks : 60

**N.B.**

- 1) Q.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 .
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the section should be written in the **SAME** answer book.

**SECTION – I**

- Q.1** State and explain types of entrepreneurs along with suitable examples. **(12)**
- Q.2** What is market assessment? How it is useful for entrepreneurs? **(12)**
- Q.3** What is a business plan? Briefly explain contents of a business plan. **(12)**
- Q.4** Elaborate the types of finance for an entrepreneur. **(12)**
- Q.5** Write short notes on any **TWO**: **(12)**
- a) Motivating factors for entrepreneurs
  - b) Role of entrepreneurs in economic development
  - c) Make-in-India

**SECTION – II**

- Q.6** Explain basic course contents of entrepreneurship development programme. **(12)**
- Q.7** What schemes are initiated by Government of India to promote entrepreneurship development? **(12)**
- Q.8** What is business opportunity? How are those identified and selected? **(12)**

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