

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-IV : WINTER : 2023
SUBJECT : COMPUTER NETWORKS

Day : Tuesday

Time : 02:00 PM-05:00 PM

Date : 12/12/2023

W-18777-2023

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** a) What is computer network? Give the classification of it. (06)
- b) Differentiate between Analog signals and digital signals. (06)
- Q.2** a) Discuss shortest path routing protocol with its merits and demerits. (06)
- b) Explain the following terms: (06)
- i) Data Encryption
 - ii) Message Authentication
- Q.3** a) What do you mean by client-server architecture? Give the functioning of it. (06)
- b) Elaborate various applications of wireless sensor networks. (06)
- Q.4** Write short notes on **ANY THREE** of the following : (12)
- a) IP-v6.
 - b) WWW.
 - c) 2G.
 - d) Connection oriented services.
 - e) Circuit switching.

SECTION – II

- Q.5** What is multiplexing? Explain FDM and TDM in detail. (12)
- Q.6** What do you mean by classful addressing? Explain IP address Classes in brief. (12)
- Q.7** As a Network engineer, you are assigned task of designing local area network of 100 computers. Give the minimum requirement to build this network. Which topology will you prefer and why? (12)

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

B.C.A. Sem-IV : WINTER : 2023

SUBJECT : SOFTWARE TESTING

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 13-12-2023

W-18778-2023

Max. Marks : 60

N.B.:

- 1) **Q. No. 4** from **SECTION-I** is **COMPULSORY**.
- 2) Attempt any **TWO** questions from Q. No. 1, 2 and 3 in Section –I.
- 3) Attempt any **TWO** questions from Q. No. 5, 6 and 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** Explain Unit Testing with its advantages. (12)
- Q.2** a) What is Risk? Explain various types of risks. (06)
b) Explain Graph based testing. (06)
- Q.3** Differentiate between the following: (12)
i) Black Box and White Box Testing Techniques
ii) Verification and Validation
- Q.4** Write short notes on any **TWO** of the following: (12)
a) Testing for Real Time System
b) Testing Patterns
c) Regression Testing
d) Boundary Value Analysis

SECTION-II

- Q.5** Explain various types of 'System Testing' in detail. (12)
- Q.6** What is debugging? Explain debugging process with suitable diagram. (12)
- Q.7** Explain Basis Path Testing as a White Box Testing technique in detail. (12)

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Day : Thursday

Time : 02:00 PM-05:00 PM

Date : 14-12-2023

W-18779-2023

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** What is an array? Explain one dimensional array with example. (12)
- Q.2** What is function overloading? Write a java program to demonstrate concept of function overloading. (12)
- Q.3** What is inheritance? Explain different types of inheritance in detail. (12)
- Q.4** Write short notes on **ANY THREE** of the following : (12)
- a) Garbage Collection.
 - b) Pass by value.
 - c) Constructor in Java.
 - d) JVM
 - e) Types of streams.

SECTION – II

- Q.5** What is an applet? Describe the different stages in the life cycle of an applet. (12)
- Q.6** Define thread? Explain life cycle of a thread in detail. (12)
- Q.7** a) Write a Java program to print numbers between 1 to 100 which are divisible by 3 and 5. (06)
- b) Write a Java program to find the factorial of a given number. (06)

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-IV : WINTER : 2023
SUBJECT : OPERATIONS RESEARCH

Day : Friday

Time : 02:00 PM-05:00 PM

Date : 15-12-2023

W-18780-2023

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** from Section – I.
- 3) Attempt **ANY TWO** questions from **Q. No. 5** to **Q. No. 7** from Section – II.
- 4) Figures to the right indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SAME** answer book.
- 6) Use of non-programmable calculator is **ALLOWED**.

SECTION – I

Q. 1 Define Operations Research. Explain its phases. (12)

Q. 2 Find optimum solution of following L.P.P. by Graphical Method. (12)

Maximize $Z = 10x + 15y$

subject to :

$$10x + 5y \leq 2500$$

$$5x + 10y \leq 2000$$

$$x + 2y \leq 400$$

$$x, y \geq 0$$

Q. 3 The following data gives cost incurred if a job is performed on different machine. There are 4 jobs and 4 machines. Assign jobs to machines so that total cost should be minimum. (12)

		Jobs			
Machines		A	B	C	D
I		3	8	5	9
II		4	2	1	6
III		3	8	5	7
IV		4	7	10	8

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

- a) Decision tree
- b) Degeneracy in transportation problem
- c) Network analysis

P. T. O.

SECTION – II

- Q. 5** Find the I. B. F. S. of following transportation problem by using: (12)
- i) North-West Corner Method (NWCM)
 - ii) Least-Cost Method (LCM)

Destination					
Sources	A	B	C	D	Capacity
I	9	12	9	6	10
II	7	3	7	7	60
III	6	5	9	11	90
Demand	80	60	70	40	

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

Activity	(1-2)	(2-3)	(2-4)	(2-5)	(3-5)	(4-5)	(5-6)	(6-7)	(6-8)	(7-8)
Duration	2	13	9	2	10	6	4	10	8	5

- i) Draw Network Diagram
 - ii) Find earliest and latest time
 - iii) Find critical path and total project duration
- Q. 7** Explain: (12)
- a) Applications of Operations Research
 - b) Hungarian Method

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-IV : WINTER : 2023
SUBJECT : OPERATIONS RESEARCH

Day : Friday

Time : 02:00 PM-05:00 PM

Date : 15-12-2023

W-18780-2023

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** from Section – I.
- 3) Attempt **ANY TWO** questions from **Q. No. 5** to **Q. No. 7** from Section – II.
- 4) Figures to the right indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SAME** answer book.
- 6) Use of non-programmable calculator is **ALLOWED**.

SECTION – I

Q. 1 Define Operations Research. Explain its phases. (12)

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- b) Degeneracy in transportation problem
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P. T. O.

SECTION – II

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Duration	2	13	9	2	10	6	4	10	8	5

- i) Draw Network Diagram
 - ii) Find earliest and latest time
 - iii) Find critical path and total project duration
- Q. 7** Explain: (12)
- a) Applications of Operations Research
 - b) Hungarian Method

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-IV : WINTER : 2023
SUBJECT : ENTREPRENEURSHIP DEVELOPMENT

Day : Saturday
Date : 16-12-2023

W-18781-2023

Time : 02:00 PM-05:00 PM
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** State and explain the types of entrepreneurs. (10)
- Q.2** Explain the various sources of information used for identifying the business ideas. (10)
- Q.3** Discuss the various characteristics of a successful entrepreneur. (10)
- Q.4** Write short notes on (**ANY TWO**): (10)
- a) Make-in-India program
 - b) Intellectual property rights
 - c) Elevator pitch

SECTION-II

- Q.5** Discuss the basic course contents of Entrepreneurship Development program. (15)
- Q.6** Explain the significance of a business plan and write in brief the contents of a business plan. (15)
- Q.7** What is the role of entrepreneurship in economic development of a nation? (15)

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