

**MASTER OF COMPUTER APPLICATIONS (CBCS 2018 COURSE) M.C.A. Sem-
III: WINTER- 2019
SUBJECT: ARTIFICIAL INTELLIGENCE (UE)**

Thursday 14-11-2019
02:00 PM-05:00 PM

W-18901-2019
Max. Marks: 60

N.B.

- 1) Attempt any **TWO** questions from Section – I. Each questions carry **12** marks.
 - 2) Attempt any **TWO** questions from Section – II. Each questions carry **12** marks.
 - 3) **Q. No. 4 is COMPULSORY**
 - 4) Figures to the right indicate **FULL** marks.
 - 5) Answers to both sections should be written in **SAME** answer book.
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SECTION – I

- Q.1** a) Explain AI problem with example. (06)
- b) Explain production system characteristics (06)
- Q.2** a) Explain different approaches to knowledge representation. (06)
- b) Differentiate between declarative knowledge and procedural knowledge. (06)
- Q.3** a) Explain Alpha – Beta cut off in detail. (06)
- b) Explain the concept of understanding (06)
- Q.4** Write short notes on any **THREE** of the following (12)
- a) Mundane task
 - b) Formal task
 - c) Predicate Logic
 - d) Forward Reasoning
 - e) Backward Reasoning

SECTION - II

- Q.5** a) Differentiate between informed and uninformed search techniques. (06)
- b) Explain A* Algorithm with example (06)
- Q.6** a) Explain different conditional statement in PROLOG. (06)
- b) What is conceptual dependency? Show a conceptual dependency representation of the sentence: "I gave the man a book". (06)
- Q.7** a) Explain iteration in PROLOG. (06)
- b) Explain recursion in PROLOG. (06)

**MASTER OF COMPUTER APPLICATIONS (CBCS 2018 COURSE) M.C.A. Sem-
III: WINTER- 2019
SUBJECT: COMPUTER NETWORKS (UE)**

Saturday 16-11-2019
02:00 PM-05:00 PM

W-18902-2019
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.
- 4) All questions CARRY EQUAL marks.
- 5) Answers to Both the sections should be written in SAME answer book.
- 6) Draw a labeled diagram WHEREVER necessary.

SECTION - I

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

- a) Compare LAN, MAN and WAN based on the area covered, speed of network, Topology used, and applications.
- b) What are design principles of good routing algorithm?

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

- a) What are different types of switching techniques? Explain circuit switching in detail.
- b) What is ICMP? Explain the functionalities which make this protocol effective.

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

- a) What is DNS Server? What are different types of records in DNS.
- b) Assume that you are purchasing goods online using Flipkart. Explain the role of TCP/IP protocol stack in this transaction.

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

- a) Network Goals and Motivations
- b) Throughput
- c) Multicast routing
- d) Network Mask
- e) DNS
- f) HTTP Responses
- g) Mobile generations

SECTION - II

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

- a) Explain types of Transmission media and their characteristics.
- b) Find the class of each IP address given below; give the suitable explanation for your answer.
 - i.) 227.12.14.87
 - ii.) 193.14.56.22
 - iii.) 14.23.720.8
 - iv.) 252.5.15.111
 - v.) 134.11.78.56
 - vi.) 100 000 00 11110000 11111111 0110011

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

- a) Explain the Resource Record in DNS.
- b) Explain the role of SMTP and POP protocol in E-mail message transfer.

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

- a) Explain Physical and MAC layer description of Bluetooth.
- b) What are the limitations of distance vector routing? How they are addressed in link state routing?

**MASTER OF COMPUTER APPLICATIONS (CBCS 2018 COURSE) M.C.A. Sem-
III: WINTER- 2019**

SUBJECT: OBJECT ORIENTED ANALYSIS & DESIGN (UE)

Tuesday 19-11-2019
02:00 PM-05:00 PM

W-18903-2019
Max. Marks: 60

N. B.

- 1) Question **FOUR** from section-I is **COMPULSORY**
- 2) Answer any **TWO** questions from Question 1, 2, 3 in Section-I
- 3) Answer any **TWO** questions from Section-II
- 4) Answers to both the sections should be written in **SAME** answer books.
- 5) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Answer the following :
- a) State and explain importance of Principles of Modelling. (06)
 - b) Explain following Relationships (06)
i) Generalization ii) Association iii) Dependency
- Q.2** Answer the following:
- a) Explain the use of Use Case Modeling in requirement gathering of given system. (06)
 - b) "Activity diagrams are advanced flow charts", Justify the statement with proper example. (06)
- Q.3** Answer the following:
- a) When to draw Class diagram? Explain strategies to identify conceptual classes. (06)
 - b) Explain role of State Chart diagram in modeling. (06)
- Q.4** Write short notes any **THREE** of the following: (12)
- a) Synchronous communication
 - b) Collaboration diagram
 - c) Behavior modeling
 - d) Aggregation
 - e) Use-case relationships
 - f) Swim lanes
 - g) Object diagram

SECTION-II

- Q.5** Answer the following:
- a) A candidate is interested to take admission to MCA program. Identify Use capital cases involved in the admission process module and draw Use Case diagram for same. (06)
 - b) Write Use case description for any two process in the above mention admission system. (06)
- Q.6** Answer the following:
- a) Describe a process of Hotel-room booking and draw Activity diagram for same. (06)
 - b) Identify classes in the ATM (Banking) system and draw class diagram for same. (06)
- Q.7** Answer the following:
- a) Describe the steps involved in online test system and also describe states of candidate in it. Draw State diagram for states of candidates in it. (06)
 - b) Identify components of 'Hospital Management System' and draw component diagram for same. (06)

**MASTER OF COMPUTER APPLICATIONS (CBCS 2018 COURSE) M.C.A. Sem-
III: WINTER- 2019
SUBJECT: PROBABILITY & GRAPH THEORY (UE)**

Thursday 21-11-2019
02:00 PM-05:00 PM

W-18904-2019
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.
- 4) All questions CARRY EQUAL marks.
- 5) Answers to Both the sections should be written in SAME answer book.
- 6) Draw a labeled diagram WHEREVER necessary.

SECTION - I

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

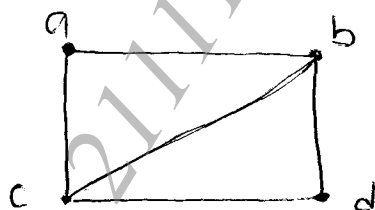
- a) Find the number of ways that a party of seven can arrange them selves
 - 1) In row of seven chairs.
 - 2) Around a circular table
- b) Define Random Variable and its mathematical Expectations.

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

- a) Fit a Poisson distribution to the following data and calculate the distribution
X: 0 1 2 3 4
F: 123 59 14 3 1
- b) What do you mean by Sampling? Briefly Explain various methods of Sampling.

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

- a) Let T follow a t-distribution with $r=8$ d.f..What is the probability that the absolute value of t is less than 2.306?
- b) Define Euler path and Euler circuit.
State whether following graph has Euler path?



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

- a) Types of Probability
- b) Theorem on Expectation
- c) Utilities of Poisson distribution
- d) Types of Sampling
- e) Application of t-test
- f) Isomorphic and Homomorphism Graphs
- g) Utilities problem

SECTION - II

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

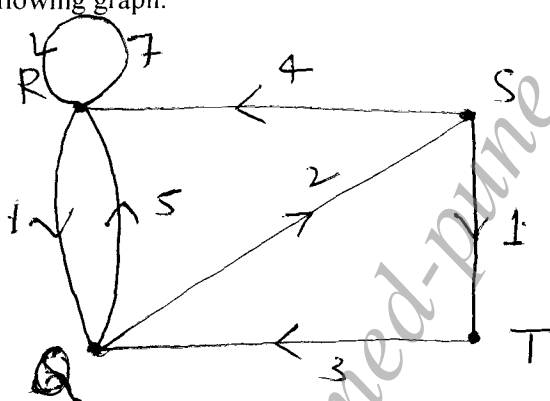
- Define Binomial distribution. Also find their means and variance.
- If 5% of the electric bulbs manufactured by a company are defective. Use Poisson distribution to find the probability that in a sample of 100 bulbs
 - None is defective
 - 5 bulbs will be defective

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

- What are the different sources of errors in a sample survey?
- What are the main objective of sampling? Explain in detail.

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

- Explain Tree Traversing Algorithm with example.
- Find the shortest path from each vertex to each of other vertex if path exists by using Warshall's algorithm in the following graph.



(2011 course)
MASTER OF COMPUTER APPLICATIONS (C.B.C.S.) M.C.A. SEM-III:
WINTER- 2019
SUBJECT: ORGANIZATIONAL BEHAVIOUR (UE)

Saturday 23-11-2019
02:00 PM-05:00 PM

W-11828-2019
Max. Marks: **100**

N.B.

- 1) Attempt any **FOUR** questions from Section – I and any **TWO** questions from Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SAME** answer book.

SECTION – I

- Q.1** Explain the concept of organizational behavior with the help of SOBC model. **(15)**
- Q.2** “Not only the size, intensity, frequency but also needs and desires, personality affect perception”. Explain. **(15)**
- Q.3** Define the term Personality. Discuss the various determinants of individual personality. **(15)**
- Q.4** Discuss the situation under which group decision making is better than individual decision making and suggest some measures to improve group decision. **(15)**
- Q.5** Explain Maslow’s hierarchy of human needs. What is the significance of Maslow’s theory of motivation? **(15)**
- Q.6** Write short notes on **ANY THREE** of the following: **(15)**
- a) Managerial grid
 - b) Classifications of groups
 - c) Conflict process
 - d) Symptoms of stress

SECTION – II

- Q.7** Discuss the nature and scope of organizational change. What are the most frequent causes of change? **(20)**
- Q.8** As a head of the software development department. how you will ensure that members work stress free. **(20)**
- Q.9** “A leader is one who know the way and shows the way”. Comment. **(20)**

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