

Please check whether you have got the right question paper.

- N.B:**
1. All questions are compulsory.
 2. Answers to the two sections must be written in same answer book and should be submitted together.
 3. Write answers to same questions together.
 4. Mixing of sub-questions is not allowed.

Q.1 A) Explain difference between continuous random variable and discrete random variable. **06**

B) Explain the following terms : **07**

(1)System (2)Entity (3) Activity (4)Attribute (5)Model (6)System state

OR

Q.1 A) It is observed that 2% of bulbs made by factory are defective. Find probability that in a sample of 200 bulbs **06**

a) Less than 2 bulbs

b) More than 3 bulbs are defective.

B) How simulation is used in real world? Explain. **07**

Q.2 A) Describe event scheduling simulation. **06**

B) A study of single machine tool system showed that the machine operates before breaking down is exponentially distributed with mean 10 hours. Determine the failure rate & reliability rate also find (1) The probability that the machine operates for at least 12 hours before breaking down (2) If the machine has already been operating 8 hours, what is the probability that it will last for another 4 hours? **07**

OR

Q.2A) Buses arrive at a specified stop at 15 minute intervals starting at 7 AM, that is, they arrive at 7, 7:15, 7:30, and 7:45 and so on. If a passenger arrives at the stop at a random time that is uniformly distributed between 7 and 7:30 AM, find the probability that he waits: **06**

(a) Less than 5 minute for bus and

(b) At least 12 minute for a bus.

B) Explain the properties of Poisson Distribution. **07**

Q.3A) What are characteristics of queuing system? **06**

B) A sample of 26 bulbs gives a mean life of 990 hours with SD of 20 hours. The manufacturer claims that the mean life of bulbs is 1000 hours. Is the sample not up to the standard? **06**

OR

- Q.3A)** Define level of significance. Explain. **06**
- B)** The heights of 10 males of a given locality are found to be 70,67,62,68,61,68,70,64,64,66 inches. Is it reasonable to believe that the average height is greater than 64 inches Test at 5%. **06**

SECTION-II

Q.4 A) What is difference between 2 tier architecture and multi-tier architecture system? Explain. **06**

B) Explain any five features of Object Oriented Programming Language. **07**

OR

Q.4A) Why COM is better than C++? Justify your answer. **06**

B) Explain the application of COM technology. **07**

Q.5A) Explain [a] Cross Apartment [b] Life Cycle Management **06**

B) What is distributed object system? Explain the evaluation of distributed object system. **06**

OR

Q.5A) Explain any five CORBA services in detail. **06**

B) What is a role of stub and skeleton in CORBA architecture? Explain with suitable diagram. **06**

Q.6A) Explain architecture of EJB. **06**

B) What are web technologies interfacing with distributed object over client Server? **06**

OR

Q.6A) Explain any five application of EJB. **06**

B) Explain the steps of creation in JNI interface. **06**

M.SC. (IT) PART-I
MOBILE COMPUTING, ADVANCED
COMPUTER NETWORKS.
(PAPER-II) (JUNE - 2018)

Q.P. Code :09549

[Time: 2½ Hours]

[Marks:75]

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SECTION - I

- Q.1 (A) Explain Advanced Frequency Shift Keying. 06
(B) Write a note on Signal propagation and its additional effects. 07
- OR**
- (A) Discuss Near and Far terminals problems. 06
(B) Write a note on "GSM Architecture" 07
- Q.2 (A) Write a note on "TETRA". 06
(B) Explain the concept of Handover in cellular mobile systems. 07
- OR**
- (A) Differentiate between GEO, MEO and LEO satellites. 06
(B) Explain Digital Video Broadcasting and state its applications. 07
- Q.3 (A) Write a note on "Bluetooth" 06
(B) Write a note on Broadband radio access network. 06
- OR**
- (A) What is Mobile IP? What do you mean by Home Agent? 06
(B) Write a short note on WML. 06

SECTION - II

- Q.4 (A) List out similarities and dissimilarities between CSU and DSU. 06
(B) What is routing? List the advantages of routing. Compare Bridges and routers. 07
- OR**
- (A) Explain working of distributed spanning tree. Why it is required? 06
(B) List the steps involved in Network Designing. 07
- Q.5 (A) Write note on Switched MultiMegabit Data Service 06
(B) Explain in detail the access network design. 06
- OR**
- (A) Discuss the advantages and disadvantages of SONET. 06
(B) Explain the layers of ATM protocol. 06
- Q.6 (A) Explain the X.25 protocol in detail 06
(B) Explain ISDN in detail. 06
- OR**
- (A) Discuss congestion control technique in Frame Relay network. 06
(B) Discuss the business and technical challenges and requirements faced by the organizations 06

M.SC. (IT) PART-I**IMAGE PROCESSING, SPEECH RECOGNITION****(PAPER-III) (JUNE - 2018)****Q. P. Code: 38477****(3 Hours)****[Total Marks: 75]**

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- 3) Write answers to same question together

SECTION I

- Q1.** A What is Image Processing? Explain all the steps. **06**
B Write short notes on Human Eye. **07**

OR

- Q1.** A Explain Brightness Adaption and Discrimination in detail. **06**
B Write short notes on Sharpening Filters. **07**

- Q2.** A What is Frequency domain? Explain its use in Image Processing. **06**
B What is Thresholding? Write the algorithm to obtain the single global Threshold automatically. **07**

OR

- Q2.** A Explain i) contrast Stretching ii) Grey Level Slicing iii) Bit Plane Slicing **06**
B Write note on Histogram Matching, also explain Histogram Equalisation. **07**

- Q3.** A Explain Image Averaging and Image Subtraction **06**
B Explain the basic steps for filtering in the frequency domain **06**

OR

- Q3.** A Define Segmentation. Explain point and edge detection. **06**
B State and explain the three types of data redundancies in Digital Image Compression **06**

SECTION II

- Q4.** A Define i. Signal Processing ii. Acoustics iii. Linguistics **06**
B Explain with block diagram of a task-specific voice control and Dialog systems. **07**

OR

- Q4.** A Why Speech endpoint detection is difficult? List the methods proposed for Speech detection. **06**
B Explain the working of Human Ear. **07**

- Q5.** A Describe Bank-of-Filters analysis model with diagram. **06**
B What is Hidden markov model? Give its some application. **06**

OR

- Q5.** A Write short note on urn and ball model. **06**
B Compare IIR and FIR Filter. **06**

- Q6.** A What are the problems associated with acoustic-phonetic approach to Speech recognition. **06**
B Write advantage and disadvantage of source coding techniques. **06**

OR

- Q6.** A Write short notes on Directory listing retrieval. **06**
B List the advantages and disadvantages of using Whole World models. **06**

M.SC. (IT) PART-I**DATA WAREHOUSING & MINING &
ADVANCED DATABASE SYSTEMS****(PAPER-IV) (JUNE - 2018)****Q. P. Code: 38480****(3 Hours)****Marks:75**

1. All Questions are compulsory.
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SECTION-I

- Q.1.A.** Explain the difference between data warehouse and Data Mart? **6**
B. What are the characteristics of Data warehouse? **7**
- OR**
- A.** Explain the knowledge discovery in database process. **6**
B. Write a short note on a) Star Schema **7**
b) Snowflake Schema
- Q.2.A.** Explain OLAP models in detail. **6**
B. Explain Web Usage Mining with example. **7**
- OR**
- A.** Explain Agglomerative Algorithm. **6**
B. Explain Time series Analysis. **7**
- Q.3.A.** What is Indexing? Explain the different indexing techniques. **6**
B. What are the recent trends in Data Mining? **6**
- OR**
- A.** Define Data Mining. Explain Any Two Applications of Data Mining. **6**
B. Explain the concept Temporal Data Mining and its applications. **6**

SECTION-II

- Q.4.A.** Explain Complex Objects with respect to OODBMS. **6**
B. State and Explain the constraints on specialization and generalization. **7**
- OR**
- A.** Explain Relationship types in DBMS . **6**
B. Explain Hierarchies and Lattices with respect to EER diagram. **7**
- Q.5.A.** Give comparison of RDBMS and ORDBMS. **6**
B. What do you mean by Data Fragmentation? Explain the different types of fragmentation. **6**
- OR**
- A.** Explain client-server architecture of distributed database. **6**
B. Write a note on –a) XPATH
b) XQUERY
- Q.6.A.** Write a short note on GIS. **6**
B. Explain XML DTDs with example. **6**
- OR**
- A.** Explain XML Schema. **6**
B. Write a note on Deductive Database. **6**
