

**B.C.A. SEM-IV (2014 COURSE) CBCS : SUMMER - 2018**

**SUBJECT : COMPUTER NETWORKS - I**

Day : **Friday**  
Date : **27/04/2018**

**S-2018-1706**

Time : **10.00 AM TO 01.00 PM**  
Max. Marks : 100

**N. B. :**

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

**SECTION - I**

- Q. 1** Explain different switching techniques in detail. **(15)**
- Q. 2** Explain different modes of communication in detail. **(15)**
- Q. 3** Differentiate between the following: **(15)**
- a) Packet Switching v/s Circuit Switching
  - b) Switches v/s Bridge
- Q. 4** Explain Bluetooth architecture in detail with its applications. **(15)**
- Q. 5** a) Explain IEEE 802.4 (Token Bus) standard in detail. **(07)**  
b) Explain IEEE 802.5 (Token Ring) standard in detail. **(08)**
- Q. 6** What are different types of transmission media? Explain twisted pair cable and coaxial cable in detail. **(15)**
- Q. 7** Write short notes on **ANY THREE** of the following: **(15)**
- a) Network Interface Card (NIC)
  - b) Internet Service Provider (ISP)
  - c) E-mail
  - d) Satellite Communication

**SECTION - II**

- Q. 8** Explain TCP/IP model in detail with appropriate diagram. **(20)**
- Q. 9** Explain Ethernet types, Ethernet cables and Ethernet topologies in detail. **(20)**
- Q.10** Design a network layout of a University for different departments. Suggest which topologies and network devices you will prefer for this network. Justify your answer. **(20)**

Day : **Monday**  
Date : **30/04/2018**

**S-2018-1707**

Time: **10.00 AM TO 01.00 PM**  
Max. Marks: 100

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**N.B.:**

- 1) Attempt any **FOUR** questions from Section-I.
  - 2) Attempt any **TWO** questions from Section-II.
  - 3) Answer to both sections should be written in **SEPARATE** answer sheets.
  - 4) Figures to the right indicate **FULL** marks.
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**SECTION-I**

- Q.1 a)** Define the term 'Testing'. Why testing is necessary? Explain goals of testing. (07)
- b)** Explain System Testing in detail. (08)
- Q.2 a)** Explain various techniques of verification. (07)
- b)** Explain debugging process in detail. (08)
- Q.3** What are various types of risks? Explain role of the testing in the risk Management. (15)
- Q.4** Explain Control Structure Testing in detail. (15)
- Q.5 a)** Explain various phases of Software Testing Process. (07)
- b)** Explain 'Flow Graph Notation'. (08)
- Q.6 a)** Explain 'Top-Down' and 'Bottom-Up' approach of Integration Testing. (07)
- b)** Explain Alpha and Beta testing. (08)
- Q.7** Write short notes on-
- a)** Unit testing (07)
- b)** Testing of client/ server architecture (08)

**SECTION-II**

- Q.8 a)** Differentiate between White-Box and Black-Box testing. Explain various methods of Black-Box testing. (20)
- Q.9** What is Real Time System? Explain testing for real time system. (20)
- Q.10** What is 'Testing pattern'? Explain various testing patterns in detail. (20)

**B.C.A. SEM-IV (2014 COURSE) CBCS : SUMMER - 2018****SUBJECT: JAVA PROGRAMMING**

Day: **Thursday**  
Date: **03/05/2018**

Time: **10.00 AM TO 01.00 PM**  
Max. Marks: 100

**S-2018-1708****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 **SEPARATE** answer book.

**SECTION-I**

- Q.1** What is inheritance? How does it help to design new classes? (15)
- Q.2** Explain try, catch and finally keyword with example. (15)
- Q.3** Explain Decision and branching statement in Java. (15)
- Q.4** Compare overloading with overriding? Comment on when to use which? (15)
- Q.5** List and explain logical and bitwise operators in Java. (15)
- Q.6** What is an Applet? Illustrate life cycle of an applet. (15)
- Q.7** Write short notes on any **TWO** of the following: (15)
- a) Interface
  - b) Command line arguments
  - c) this and super

**SECTION-II**

- Q.8** a) Write a Java program to print following pattern. Accept number of rows to print from user. (10)
- ```
1
1    1
1    2    1
1    3    3    1
1    4    6    4    1
```
- b) Write a Java program to get sum of all the numbers from m to n which are divisible by 3, 5 and 7. (10)
- Q.9** Write a class with static method as below: (20)
- static boolean isPrime (int n) { }*
- Which returns true if a number is prime otherwise false
- Use this method to count prime numbers among the n numbers entered by user?
- Q.10** Write a class student with properties (20)
- rollNo
  - name
  - programme
  - semester
- With parametrized constructor. Also provide methods to set and get values. Also write a main method to create object to this class. Use this class to create instances and display them.

**B.C.A. SEM-IV (2014 COURSE) CBCS : SUMMER - 2018**  
**SUBJECT : STATISTICS**

Day : **Saturday**  
Date : **05/05/2018**

**S-2018-1709**

Time : **10.00 AM TO 01.00 PM**  
Max. Marks : 100

**N. B. :**

- 1) Attempt **ANY FOUR** questions from Section – **I** and attempt **ANY TWO** questions from Section – **II**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.
- 4) Use of non-programmable calculator is **ALLOWED**.
- 5) Graphs should be drawn on **GRAPH PAPERS** only.

**SECTION – I**

**Q. 1** Define Statistics. Explain its importance in brief. **(15)**

**Q. 2** Draw Histogram and Frequency Polygon for the following data: **(15)**

|                |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Daily Wages    | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
| No. of Workers | 15    | 20    | 35    | 45    | 60    | 30    | 5     |

**Q. 3** Calculate mean, median and mode for the following data: **(15)**

|           |         |         |         |         |         |
|-----------|---------|---------|---------|---------|---------|
| Class     | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 |
| Frequency | 5       | 15      | 30      | 20      | 10      |

**Q. 4** Using Coefficient of Variation find which of the following batsman is more consistent in his scores? Why? **(15)**

|            |    |     |    |    |   |    |     |    |    |    |
|------------|----|-----|----|----|---|----|-----|----|----|----|
| Score of A | 45 | 120 | 8  | 75 | 9 | 20 | 120 | 40 | 85 | 30 |
| Score of B | 48 | 15  | 80 | 45 | 8 | 50 | 30  | 46 | 15 | 3  |

**Q. 5** Height in cm of 50 students in a class are given below: **(15)**

168   169   168   165   161   167   162   171   167   159  
166   170   159   166   164   162   157   171   168   157  
170   160   169   164   169   171   166   163   169   172  
167   163   161   171   157   167   158   162   168   167  
164   162   161   168   163   172   160   158   168   169

Prepare a frequency distribution table using classes as 157 – 160, 160 – 163...  
Also find the relative frequencies.

**Q. 6** Represent the following data using Pie Diagram: (15)

| Group of Item     | Average monthly expenses (in Rs.) of a family |
|-------------------|-----------------------------------------------|
| Food              | 2400                                          |
| Clothing          | 1400                                          |
| House Rent        | 1600                                          |
| Fuel and Lighting | 600                                           |
| Miscellaneous     | 2000                                          |

**Q. 7** Write short notes on **ANY THREE** of the following: (15)

- Scope of Statistics
- Measures of Dispersion
- Correlation v/s Regression Analysis
- Analysis of Time Series

## SECTION - II

**Q. 8** Define primary and secondary data. Explain various primary data collection methods in brief. (20)

**Q. 9** Estimate trend using 4 yearly moving average method for the following data: (20)

| Year                        | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-----------------------------|------|------|------|------|------|------|------|
| Production (in '000 tonnes) | 464  | 515  | 518  | 467  | 502  | 540  | 557  |

**Q.10 a)** Calculate the Karl Pearson's Coefficient of Correlation between advertisement cost (x) and sales (y) from the following data: (10)

|                          |    |    |    |    |    |    |    |     |    |    |
|--------------------------|----|----|----|----|----|----|----|-----|----|----|
| Advertisement ('000 Rs.) | 41 | 67 | 65 | 92 | 84 | 77 | 27 | 100 | 38 | 80 |
| Sales (Lakhs Rs.)        | 46 | 52 | 57 | 85 | 61 | 67 | 59 | 90  | 50 | 83 |

**b)** Obtain line of regression of y on x for the data given below: (10)

|   |    |    |    |    |    |
|---|----|----|----|----|----|
| X | 06 | 02 | 10 | 04 | 08 |
| Y | 09 | 11 | 05 | 08 | 07 |

Also estimate y when x = 5.