

**B.C.A. SEM-IV (2014 COURSE) CBCS : WINTER - 2017**  
**SUBJECT : COMPUTER NETWORKS - I**

Day : **Friday**  
Date : **10/11/2017**

**W-2017-1614**

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** Define computer network. What are advantages of computer networks? List any five applications of computer networks. **(15)**
- Q. 2** What are different classes of transmission media? Explain guided media in detail. **(15)**
- Q. 3** Explain architecture of wireless LAN [IEEE 802.11] with neat suitable diagram. **(15)**
- Q. 4** Differentiate between the following: **(15)**
- a) Hub v/s Switch
  - b) LAN v/s WAN
- Q. 5** Explain IEEE (802.3) (Ethernet) standard in detail. **(15)**
- Q. 6** Explain different network security devices used in connecting networks. **(15)**
- Q. 7** Write short notes on **ANY THREE** of the following: **(15)**
- a) Bluetooth
  - b) Network Interface Card (NIC)
  - c) Search Engines
  - d) Internet Information Server (IIS)

**SECTION - II**

- Q. 8** Explain OSI reference model in detail with appropriate diagram. **(20)**
- Q. 9** Design a network layout for your college network. Suggest which topologies and network devices you will prefer for this network. Justify your answer. **(20)**
- Q.10** a) Explain the concept of Internet and Extranet. **(10)**  
b) Explain various types of Bluetooth. **(10)**

**B.C.A. SEM-IV (2014 COURSE) CBCS : WINTER - 2017**  
**SUBJECT: SOFTWARE TESTING**

Day : **Monday**  
Date : **13/11/2017**

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

**W-2017-1615**

**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)**    Why testing is necessary? Explain various goals of testing. **(07)**
- b)**    Explain Unit Testing. **(08)**
- Q.2**            Explain Integration Testing in detail. **(15)**
- Q.3**    **a)**    Differentiate between testing and debugging. **(07)**
- b)**    Explain various phases of Software Testing Process. **(08)**
- Q.4**            What is risk? Explain various types of risks. **(15)**
- Q.5**            Explain various methods of Black-Box testing. **(15)**
- Q.6**            What are real time systems? Explain any two real time systems. **(15)**
- Q.7**            Write short notes on-
- a)**    Testing of client/ server architecture **(07)**
- b)**    Performance testing. **(08)**

**SECTION-II**

- Q.8**    **a)**    Explain principles and techniques of verification. **(10)**
- b)**    Explain V-Testing model with suitable diagram. **(10)**
- Q.9**            Explain various methods of White-Box Testing in detail. **(20)**
- Q.10**          What are testing patterns? Explain various testing patterns in details. **(20)**

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**B.C.A. SEM-IV (2014 COURSE) CBCS : WINTER - 2017**

**SUBJECT: JAVA PROGRAMMING**

Day: **Wednesday**  
Date: **15/11/2017**

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

**W-2017-1616**

**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**    a) State and describe features of Java. **(08)**  
          b) Explain relational and logical operates in Java. **(07)**
- Q.2**        What is use of control structures? Illustrate control structures in Java. **(15)**
- Q.3**        What do you know about garbage collection? Explain how it is done in Java. **(15)**
- Q.4**        What do you know about Abstract class and Interface? Describe when to use which **(15)**
- Q.5**        Explain Exception handling in Java with example. **(15)**
- Q.6**        What is applet? Illustrate applet life cycle with example. **(15)**
- Q.7**        Write short notes on any **TWO** of the following: **(15)**
- a) Command line arguments
  - b) Access specifiers in Java
  - c) Package

**SECTION-II**

- Q.8**    a) Write a program to read 10 numbers and print sum of numbers divisible by both 2 and 7. **(10)**  
          b) Write a Java program to read two numbers (m, n) using command line arguments where m, n and all prime numbers among between them. **(10)**

- Q.9**    a) Write a Java program to print following pattern **(10)**

```

  *   *   *   *   *
    *   *   *   *
      *   *   *
        *   *
          *
            *

```

- b) Write a Java program to print following pattern **(10)**

```

                        1
                      2  3
                    4  5  6
                  7  8  9  10
                11 12 13 14 14

```

- Q.10**    Write a class to represent Bank Account with account details. Such as account holder name, balance, with account number and methods to deposit, withdraw amount and get balance. Also write main method to test it. **(20)**

**B.C.A. SEM-IV (2014 COURSE) CBCS : WINTER - 2017****SUBJECT : STATISTICS**

Day : Friday  
Date : 17/11/2017

**W-2017-1617**

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 the scope of statistics in brief. **(15)**

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

Daily Wages	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Workers	10	20	30	50	35	20	10

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

Weight (kg.)	30-40	40-50	50-60	60-70	70-80	80-90
No. of Students	40	50	70	30	20	5

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

Score of A	42	115	6	73	7	19	119	36	84	29
Score of B	47	12	76	42	4	51	37	48	13	0

**Q. 5** The marks out of 100 scored by 40 students in Statistics are given below: **(15)**

60 75 63 38 55 40 63 61 47 40  
30 80 40 71 60 42 55 43 52 53  
43 56 57 66 69 46 43 57 57 49  
58 58 54 68 43 53 49 48 50 68

Prepare a frequency distribution table using classes as 25-30, 30-35, .....  
Also find relative frequencies.

**Q. 6** Represent the following data using sub-divided bar diagram: **(15)**

Year	No. of Students			
	Arts	Science	Commerce	Total
2002-03	800	800	1400	3000
2003-04	750	1000	1750	3500
2004-05	700	1100	1800	3600
2005-06	900	1200	1900	4000

**P. T. O.**

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

- a) Properties of Correlation Coefficient
- b) Limitations of Statistics
- c) Correlation v/s Regression Analysis
- d) Cumulative Frequency Distribution

## 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 for the following data: **(20)**

Year	1997	1998	1999	2000	2001	2002	2003	2004
Annual Sale (lakhs in Rs.)	36	43	43	34	44	54	34	24

**Q.10 a)** Daily income and savings for the 10 employees in a certain company are given below: **(10)**

Income (in '000 Rs.)	250	750	820	900	780	360	980	390	650	620
Savings (in '000 Rs.)	60	68	62	86	84	51	91	47	53	58

Compute the Karl-Pearson's coefficient of correlation between income and savings.

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

X	45	70	65	30	90	40	50	75	85	60
Y	35	90	70	40	95	40	60	80	80	50

Also estimate x when y = 75.