

Subject : Computer Network - I

Day : Tuesday

Date : 12/04/2016



Time : 10.00 AM TO 01.00 PM

Max Marks : 100 Total Pages : 1

N.B.:

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

SECTION – I

- Q.1 What are different modes of communication? Explain computer networks goals and its advantages. [15]
- Q.2 Explain Token ring IEEE in terms of specification and frame format. [15]
- Q.3 Discuss advantages and disadvantages of following network devices: [15]
- a) Hub
 - b) Repeater
- Q.4 Explain LAN, WAN and MAN in detail. [15]
- Q.5 What is CSMA / CD? Explain its working in detail. [15]
- Q.6 Discuss different layers of OSI reference model. [15]
- Q.7 Write short notes on the following: [15]
- a) Intranet and Extranet
 - b) Gateways
 - c) Wireless transmission media - Radio Waves

SECTION – II

- Q.8 Explain wireless LAN (IEEE 802.11) architecture frame format and frame types. [20]
- Q.9 What is transmission media? Explain any four types with its advantages and disadvantages. [20]
- Q.10 What is Switching? Explain when and when not to use different switching techniques. [20]

* * * *

Subject : Software Testing

Day : Saturday
Date : 16/04/2016



Time : 10.00 AM TO 01.00 PM
Max Marks : 100 Total Pages : 1

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 the **SAME** answer book.

SECTION – I

- Q.1** a) What is testing? Explain various phases of software testing process in detail. (07)
- b) Explain Top-down and Bottom-up approaches of integration testing in detail. (08)
- Q.2** a) Describe V-Testing model with the neat diagram. (07)
- b) Differentiate between ‘Testing’ and ‘Debugging’. (08)
- Q.3** Define ‘Risk’. Illustrate its various characteristics. What is a role of testing in risk management? (15)
- Q.4** Explain basis path testing with its advantages and disadvantages. (15)
- Q.5** a) Explain the terms ‘Verification’ and ‘Validation’. Discuss various techniques of verification. (08)
- b) How to do a testing of client/server architecture? Explain. (07)
- Q.6** Why System Testing is necessary? Explain various types of System testing. (15)
- Q.7** Write short notes on the following:
- a) Unit Testing (08)
- b) Alpha and Beta testing (07)

SECTION – II

- Q.8** Explain black-box testing in detail. (20)
- Q.9** What are real time systems? Explain testing for real time systems in detail. (20)
- Q.10** Differentiate between Glass Box Testing and behavioral testing techniques. Explain control-structure testing in detail. (20)

* * *

Subject : Java Programming

Day : Wednesday
Date : 20/04/2016



Time : 10.00 AM TO 01.00 PM
Max Marks : 100 Total Pages : 1

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) Both the sections should be written in the **SAME** answer book.

SECTION – I

- Q.1** a) Explain Java features in detail. (08)
b) Describe Java primitive data types. (07)
- Q.2** What is looping? Describe for loop and while loop in detail. (15)
- Q.3** What is method overloading? Explain with suitable example. (15)
- Q.4** What is interface? Explain using suitable example. (15)
- Q.5** Define inheritance? How can you call a constructor in inheritance? Explain with example. (15)
- Q.6** a) What is a package and why is it required in Java? (08)
b) What do you mean by error? Explain types of errors? (07)
- Q.7** Write short notes on **ANY TWO** of the following: (15)
a) Difference between throw and throws
b) Abstract classes and Abstract methods
c) Relational and Logical operators

SECTION - II

- Q.8** a) What is an applet? How is it different from an application? (10)
b) Write a java application to print the reverse number of a given number. (10)
- Q.9** Design a class to represent a bank account. Create appropriate data members and write methods to perform following task. (20)
a) Assign initial value to all data members using constructor.
b) Deposit an amount.
c) Withdraw an amount after checking balance.
d) Display the name and balance.
- Q.10** a) Write a Java program to convert decimal number to its binary equivalent. (10)
b) Write a Java program to input five digit numbers and display its last and first digits. (10)

* * * * *

Subject : Statistics

Day : Friday
Date : 22/04/2016



Time : 10.00 AM TO 01.00 PM
Max Marks : 100 Total Pages : 2

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.
- 4) Use of non programmable **CALCULATOR** is allowed.
- 5) Graphs should be drawn on **GRAPH PAPERS** only.

SECTION-I

- Q.1** Define Statistics and discuss its scope in Computer Science and explain its limitations. (15)
- Q.2 a)** What are the different sources of secondary data? Explain in brief. (07)
- b)** Prepare frequency distribution table taking class intervals as: 15-25, 25-30, 30-35 and so on using the following observations. (08)

15	45	40	42	50	60	62	68	70	42
75	75	80	81	25	60	31	32	78	45
31	45	42	43	55	26	78	80	81	62
60	62	58	69	70	56	50	56	72	58
75	62	62	65	60	45	35	37	40	55

- Q.3 a)** Draw histogram and frequency polygon for the following data: (07)
- | Variable | 100-110 | 110-120 | 120-130 | 130-140 | 140-150 | 150-160 |
|-----------|---------|---------|---------|---------|---------|---------|
| Frequency | 20 | 35 | 50 | 60 | 40 | 15 |
- b)** Represent the following data by a pie- diagram. (08)

Items	Expenditure in Rs.
Food	84
Clothing	27
Recreation	10
Education	15
Rent	23
Miscellaneous	21

- Q.4** From the prices of shares of X and Y below, calculate coefficient of variation to find out which is more stable in value. (15)

X	35	54	52	53	56	58	52	50	51	49
Y	108	107	105	105	106	107	104	103	104	101

P. T. O.

- Q.5 For a bivariate data on x and y , the regression equations to two lines of regression are: $3x - 2y + 1 = 0$ and $3x - 8y + 13 = 0$. Predict the value of y for $x = 4$ and value of x for $y = 3$. (15)

- Q.6 a) Calculate range and its coefficient for the following data: (07)
4320, 4380, 4380, 4400, 4410, 4390, 4370, 4390
b) Calculate mean and mode for the following data: (08)

Class	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	12	18	27	20	17	06

- Q.7 Write short notes on the following: (15)
- Types of correlation
 - Measures of dispersion
 - Measures of Trend

SECTION-II

- Q.8 The figures of production (in thousand quintals) of sugar factory are given below: (2)

Year	2002	2003	2004	2005	2006	2007	2008
Production	80	90	92	83	94	99	92

- Fit a straight line trend to these figures.
 - Plot these figures on a graph and show the trend line.
 - Estimate the production in 2010.
 - Estimate the production in 2014.
- Q.9 For the data given below: (2)

Marks in Economics	25	28	35	32	31	36	29	38	34	32
Marks in Statistics	43	46	49	41	36	32	31	30	33	39

Find:

- Karl Pearson's coefficient of correlation between the marks in Economics and Statistics.
 - The two regression equations.
 - The most likely marks in Statistics when marks in Economics are 30.
 - The most likely marks in Economics when marks in Statistics are 45.
- Q.10 a) Calculate mean and median for the following data:

Marks (below) :	5	10	15	20	25	30	35
No. of students:	1	3	9	17	27	36	38

- b) Explain the different components of time series in brief.

* * * *

Subject : Computer Networks - I

Day : Tuesday

Date : 08/11/2016



Time : 10.00 AM TO 01.00 PM

Max Marks : 100 Total Pages : 1

N.B.:

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

SECTION – I

- Q.1** What is Computer Network? Explain various network topologies with their advantages and disadvantages. [15]
- Q.2** What is switching? Explain when and when not to use circuit switching technique. [15]
- Q.3** Discuss advantages and disadvantages of following network devices: [15]
a) Switches b) Repeater
- Q.4** Explain OSI reference model. [15]
- Q.5** Explain Token bus (IEEE 802.4) in terms of specification and format. [15]
- Q.6** What is Internet? Explain the concept of Intranet and Extranet. [15]
- Q.7** Write short notes on the following: [15]
a) CSMA / CD
b) Internet Information Server (IIS)
c) Network security device (Proxy Server)

SECTION – II

- Q.8** Explain internet layer of TCP / IP protocol model. [20]
- Q.9** a) Discuss Bluetooth architecture and its applications. [10]
b) Differentiate between LAN and WAN. [10]
- Q.10** What do you mean by Transmission media? Explain guided transmission media with its type and advantages and disadvantages. [20]

Subject : Software Testing

Day : Thursday
Date : 10/11/2016



Time : 10.00 AM TO 01.00 PM
Max Marks : 100 Total Pages : 1

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 the **SAME** answer book.

SECTION – I

- Q.1** a) Define the term testing. Why testing is necessary? Explain various goals of it. (07)
- b) Explain system testing in detail. (08)
- Q.2** a) Explain various techniques of verification. (08)
- b) Write a note on “Testing Patterns”. (07)
- Q.3** a) What are various characteristics of risk? Explain various types of it. (08)
- b) Explain various phases of software testing process. (07)
- Q.4** Differentiate between:
- a) Alpha and beta testing (07)
- b) Testing and Debugging (08)
- Q.5** a) How to drive test cases? Illustrate. (07)
- b) How an individual unit can be tested? Explain. (08)
- Q.6** What are real time systems? Explain various methods to test real time systems. (15)
- Q.7** Write a short notes on the following
- a) Integration Testing (08)
- b) Testing of client/server architecture (07)

SECTION – II

- Q.8** Explain various methods of black-box testing in detail. (20)
- Q.9** Explain role of testing in risk management. (20)
- Q.10** Explain basis path testing with its merits and demerits. (20)

Subject : Statistics

Day : Wednesday
Date : 16/11/2016



Time : 10.00 AM TO 01.00 PM
Max Marks : 100 Total Pages : 2

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.
- 4) Use of non programmable **CALCULATOR** is allowed.
- 5) Graphs should be drawn on **GRAPH PAPERS** only.

SECTION-I

Q.1 Define Statistics and discuss its importance and limitations. **(15)**

Q.2 a) Explain various methods that are used in the collection of primary data. **(07)**

b) Prepare a frequency distribution table taking class intervals as: 20-24, 25-29, 30-34 and so on from the following data: **(08)**

21	20	55	39	48	46	36	54	42	30
20	42	32	40	34	31	35	37	52	44
39	45	37	33	51	53	52	46	43	47
41	26	52	48	25	34	37	33	36	27
54	36	41	33	23	39	28	44	45	38

Q.3 a) Draw histogram and frequency polygon for the following data: **(07)**

Marks Obtained	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	20	50	80	100	70	10

b) The dividend given by a software company from 2005 to 2011 is given below: **(08)**

Year	2005	2006	2007	2008	2009	2010	2011
Dividend (%)	20	30	32	50	60	50	40

Represent the data using bar diagram.

Q.4 Calculate coefficient of variation from the following frequency distribution: **(15)**

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	05	15	30	50	35	15	10

Q.5 a) Calculate Spearman's coefficient of correlation between marks assigned to ten students by judge X and judge Y in a certain competitive test as shown below: **(07)**

Sr. No.	1	2	3	4	5	6	7	8	9	10
Marks by Judge X	52	53	42	60	45	41	37	38	25	27
Marks by Judge Y	65	68	43	38	77	48	35	30	25	50

P. T. O.

- b) You are given the following data: (08)

	X	Y
Mean	36	85
Standard Deviation	11	8

Correlation coefficient between X and Y is 0.66. Find:

- Two regression equations
- Estimate value of X when Y = 75.

- Q.6 Calculate the mean, median and mode for following data: (15)

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	1	4	6	8	10	9	5

- Q.7 Write short notes on the following: (15)

- Merits and demerits of median
- Graphs and diagrams
- Uses of Time Series

SECTION-II

- Q.8 a) What do you understand by central tendency? Explain the characteristics of good measures of central tendency. (10)

- b) The following table shows the distribution of 100 families according to their expenditure per week. The mode of the distribution is Rs.23. Calculate the missing frequencies and the arithmetic mean. (10)

Expenditure per week (in rupees)	0-10	10-20	20-30	30-40	40-50
No. of families	14	x	27	y	15

- Q.9 a) Define Time Series Analysis and explain the components of Time Series. (10)

- b) Calculate 3- years moving averages of the production figures given below and draw the trend: (10)

Year	Production (in tonnes)	Year	Production (in tonnes)
1995	15	2003	63
1996	21	2004	70
1997	30	2005	74
1998	36	2006	82
1999	42	2007	90
2000	46	2008	95
2001	50	2009	100
2002	56	2010	102

- Q.10 Compute Karl Pearson's correlation coefficient between height (X) and weight (Y) from the following data. Also obtain the two regression lines: (20)

Height (X) :	61	65	68	62	60	63	64	69	70	66
Weight (Y) :	62	67	70	64	63	68	70	76	75	70