

DEPARTMENT OF COMPUTER SCIENCE
SESSIONAL Ist- COMPUTER NETWORKS (CSCC 35), MCA-III SEM

TIME: 60 mnts
DATE 13-09-17

M.M. : 15

NOTE: *ATTEMPT ANY three QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS. GIVE PROPER JUSTIFICATION FOR ANSWERS.*

- (1) Briefly discuss TCP/IP reference model.
- (2) An Ethernet MAC sublayer receives 42 bytes of data from the upper layer. Is there any need of padding to this data? How is the preamble field different from the SFD field? Give justification.
- (3) Illustrate the solution to the problem of preventing the sender from flooding the receiver with frames faster than the latter is able to process.
- (4) Illustrate the solution of the problem occurred as a consequence of the rule requiring a sender to wait for an acknowledgement before sending another frame.

$$2) T(n) = 2T(\sqrt{n}) + \log n$$

Subject Analysis and Design of Algorithm
Course Code CSCC34 (MCA 3rd Sem)

Test Sessional 1
Time 1 hr

5*3 Marks

Answer any three questions (Qno 4 is compulsory).

Qno1) Explain with the help of examples different complexity Notations.

Qno2) Write an algorithm for quick sort. Discuss its asymptotic analysis.

Qno3) Perform quick sort or merge sort on 10,80,30,90,40,50,70. Show each pass.

Qno4) Solve

$$1) T(n) = 1 \quad \text{if } n=1 \\ = T(n-1) + \log n \quad \text{if } n>1$$

$$2) T(n) = 2T(\sqrt{n}) + \log n$$

$$3) T(n) = T(\sqrt{n}) + c$$

c. Define Interpolation and extrapolation and also give examples.

<2>

Department of Computer Science, Jamia Millia Islamia
First Internal Assessment Test (MCA CSCC36)-2017
MCA-3rd Semester
Paper: Scientific and Statistical Technique using FORTRAN/R

Time: 1hr

Note: Attempt all the questions.

Max Marks:15

Date: 13/9/17

Q1a. Derive formula for false position method for finding root of non-linear equation. <2>

③ b. Find root of the following non-linear equation. Initial approximation is 0.5 and 1.0.

$\cos x - x e^x = 0$ (upto three iterations only) <3>

c. Write a program to implement the aforesaid method. <2>

Q2 a. Solve the following using Gauss elimination method. <3>

$$2x_1 + x_2 + x_3 = 10$$

$$3x_1 + 2x_2 + 3x_3 = 18$$

$$x_1 + 4x_2 + 9x_3 = 16$$

b. Given the table of values as <3>

X	2.5	3.0	3.5	4.0	4.5
Y(x)	9.75	12.45	18.70	19.52	23.75

Find Y(4.25) Using Lagrangian Interpolating/ Forward Difference Interpolation Formula

c. Define Interpolation and extrapolation and also give examples. <2>

Department of Computer Science
MCA Sem III

DBMS: SESSIONAL I

Answer all questions.

Time: 1 hr.

Q1) Attempt all:

(2 +3 marks)

- a) Who are the workers behind the scenes?
- b) What is Metadata? Explain its varieties.

Q2) Attempt all:

(1+2+2 marks)

- a) Write SQL query to obtain names of clients based in either Delhi or Mumbai from the client_master table.
- b) Explain the Substr function in Oracle citing an example.
- c) Explain use of wildcard characters in Oracle with some example.

Q3) Attempt all:

(1+2+2 marks)

- a) Explain the PL/SQL block of code.
- b) Write a PL/SQL program to enter the radius of a circle and print its area.
- c) Explain the various loops used in PL/SQL.