S.E. (I.T.)
05/06/13 Sem- IV (Rev)
FAMTI M/J-13

Con. 6659–13. **GS–7485**

(3 Hours) **[Total Marks : 100**

N.B. (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from question Nos. **2** to 7.
(3) **All** questions carry **equal** marks.
(4) If **required**, make **suitable** assumptions and **mention** them.

1. (a) Explain double entry book keeping with suitable examples. **20**
   (b) Enumerate types of accounts.
   (c) Explain the utility of trial balance.
   (d) Explain how new product development is managed.

2. (a) Explain credit and debit note. **10**
   (b) Explain impact of technology on national economy. **10**

3. (a) Define and explain balance sheet, profit and loss account and cash flow statement. **10**
   (b) Explain the S curve model and technological improvement. **10**

4. (a) List types and patterns of innovation, explain collaborative strategies. **10**
   (b) What do you mean by Cost Accounting ? Explain activity based costing in detail. **10**

5. (a) What is meant by depreciation ? What are the depreciation methods ? Explain straight line method with suitable numerical values. **10**
   (b) Explain ABC and EOQ techniques of inventory management. **10**

6. (a) Sunderlal and Co. purchased a machine on 01/04/2008 for ₹ 7,00,000/-. Its useful life is seven years and at the end of its useful life, its scrap value is estimated to be ₹ 75,000/- **10**
   Show how depreciation would be calculated over the entire life span of the machine using :—
   (i) Reducing balance method and
   (ii) Straight line method.
   (Assume depreciation rate of 10%).
   (b) Following operating transactions were made by M/s. John Smith and Co. during a week. Calculate the cash flow for the period :— **10**

(i)	Payment received from M/s. Wilson and Nicholson	₹ 6,50,000/-
(ii)	Bill paid to M/s. SAIL for supply of steel sheets	₹ 2,50,000/-
(iii)	Wages to (daily wage) workers	₹ 1,00,000/-
(iv)	Income Tax installment	₹ 1,50,000/-

7. Write short notes on :— **20**
   (a) Wealth creation
   (b) Book Keeping procedures
   (c) Entrepreneurship and innovation
   (d) Importance of management accounting in competitive environment.

S.E (IT) - Sem IV

Networking Tech. for Digital Devices.

VT-F.H.Exam. May-13-103

Con. 6642–13. **GS–7371**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from remaining **six** questions.

1. (a) List the five key differences between TCP references Model and OSI reference model. **5**
   (b) Explain working of RPC. **5**
   (c) Draw IP Header format. **5**
   (d) Write differences between LAN, MAN and WAN. **5**

2. (a) Differentiate between (i) RIP and OSPF (ii) Star topology and Bus topology. **10**
   (b) Differentiate between static routing and dynamic routing. Also explain working RIP, problems and solution of RIP in detail. **10**

3. (a) Explain ALOHA, Slotted ALOHA and CSMA/CD. **10**
   (b) Explain following with example :– **10**
      (i) IP address
      (ii) Pnt No.
      (iii) URL
      (iv) MAC address
      (v) Socket.

4. (a) Explain working of DNS, type of DNS entry, Need for Reverse lookup entry, Also Map any URL with DNS hierarchy. **10**
   (b) Write the steps to compute the check sum in CRC code. Calculate CRC for the frame 110101011 and the generate polynomial is $x^4 + x + 1$ and write transmitted frame. **10**

5. (a) Explain the factors which will determine the length of the Sliding Window. **5**
   (b) Describe Purpose of various TCP timers. **5**
   (c) Explain various transparency that you need to achieved in Distributed system. **10**

6. (a) Differentiate between :– **10**
      (i) TCP V/s UDP
      (ii) Packet Switch Network V/s Circuit Switch Network.
   (b) Explain TCP Connection Establishment and Closing Mechanism. **10**

7. Write short notes on :– **20**
   (a) CORBA
   (b) SNMP
   (c) Internetworking Devices
   (d) OSPF.

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S.E (IT) sem IV (R) May 2013
Principles of Comm. Engg.
27/5/13

P4-RT-Exam.-Feb.-13-2-300

Con. 6612–13. **GS–7263**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of the remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume **suitable** data if **necessary.**

1. Attempt any **four** of the following :– **20**

(a) What are the advantages of SSB transmission over DSB-FC ? Why is SSB transmission not generally used for broadcasting applications ?

(b) Define the following terms :–
(i) Noise figure
(ii) Noise temperature.

(c) A single tone FM signal is given by $V_{FM} = 10 \sin(16\pi \times 10^6 t + 20 \sin 2\pi \times 10^3 t)$ volts. Find –
(i) Maximum frequency deviation
(ii) Bandwidth of FM using Carson's rule.

(d) What is aliasing error ? How can we present it ?

(e) What is double spotting in a radio receiver ?

2. (a) Find the Fourier Transform of the following :– **10**
(i) δ (t)
(ii) $\sin\omega_o t$.

(b) What are the different methods of FM generation ? Sketch the circuit and explain the principle of reactance modulator ? Why is direct modulation not preferred for FM generation ? **10**

3. (a) A sinusoidal carrier has an amplitude of 20V and a frequency of 200 kHz. It is amplitude modulation by a sinusoidal voltage of amplitude 6V and frequency 1 KHz. Modulated voltage is developed across a 80Ω resistance. **12**
(i) Write the equation for the modulated wave
(ii) Determine the modulation index
(iii) Draw the spectrum of modulated wave
(iv) Calculate the total average power
(v) Calculate the power carried by sidebands.

(b) Compare (i) TDM and FDM (ii) PCM and DM. **8**

[TURN OVER

4. (a) With the block schematic, explain the operation of ISB transmitter with pilot carrier. What is the advantage of transmitting a pilot carrier ? **10**

   (b) What is companding ? State its advantages. **4**

   (c) Explain slope overload and hunting error in Delta modulation. **6**

5. (a) What are the limitations of Tuned RF receiver ? Draw the block diagram of superheterodyne AM receiver and describe the function of each block. **10**

   (b) With the help of neat block diagram explain the generation and detection of a PPM signal. Also state the merits and demerits of a PPM transmission. **10**

6. (a) Explain different types of communication channels and their characteristics. **10**

   (b) Compare : AM and FM. **5**

   (c) Explain Pre-emphasis and De-emphasis in FM. **5**

7. Write short notes on :– **20**
   (a) Automatic Frequency Control (AFC)
   (b) Application of multiplexing technique in wireless communication
   (c) Frequency shift keying
   (d) AGC principle in AM receivers.

Internet Programming IT - Sem IV

21|5|13

VT-F.H.Exam. May-13-36

Con. 6547–13. **GS–7149**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.

1. (a) Write an HTML code to create a form containing dropdown list. The dropdown list contains colors red, green, blue, grey. Write a javascript code to change the background color as soon as the user selects the color from the drop down menu. **10**
(b) What is the need of cookies ? How can cookies be used to set up a counter, which shows rumber of times the user has visited the page. **10**

2. (a) Explain various session tracking techniques. **10**
(b) Write ASP code to search specific record in a database and display the result. **10**

3. (a) With the help of suitable examples compare and contrast the use of and . **10**
(b) Explain XML altributes and elements. **10**

4. (a) Write ASP code for the following :– **10**
(i) To find out the various browser types.
(ii) To find out visitors IP address
(iii) To redirect a user to different URL
(iv) To find when the file was last modified.
(b) Differentiate between <table width = "400" height = "200"> and <table width = "100%" height = "50%">. **5**
(c) Differentiate between GET and POST method. **5**

5. (a) What do you understand by web service ? Explain with example. **10**
(b) Explain JDBC API and JDBC drivers in detail. **10**

6. (a) Explain life cycle of Servlet. Differentiate between JSP and servlet. **10**
(b) What is the need of stylesheets ? Explain different cascading stylesheets with example. **10**

7. Write short notes on :– **20**
(a) Web system architecture
(b) Document type definition
(c) RSS
(d) XSL.

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14/5/2013 SE. (I.T.) SEM IV (Rev) May 2017
Microproc. & Microcont.

1st Half-13-Mina - (c)-83

Con. 6504-13. **GS-7038**

(3 Hours) **[Total Marks : 100**

N. B. : (1) Question No. **1** is **compulsory**.
(2) Answer any **four** questions out of the **remaining** questions.
(3) Draw neat **diagrams** wherever **necessary**.

1. Design an 8086 based system to interface :— **20**
   (i) 64 kB RAM using 62256 chips
   (ii) 64 kB EPROM using 27256 chips
   (iii) 2, 16-bit input/output port in hand shake mode.
   For the same :–
   (a) Determine the memory map
   (b) Draw the entire interfacing diagram
   (c) Perform absolute decoding.

2. (a) Explain the hardware and the software interupts of 8051 microcontroller. **10**
   (b) Explain the Timer/Counter of IC 8051. **10**

3. (a) Explain the addressing modes of 8086 with examples. **10**
   (b) Explain what is meant by segmented memory. Explain its advantages and disadvantages. Also explain what is meant by logical and physical address in 8086 with example. **10**

4. (a) Explain the register file structure of stack of PIC microcontroller. **10**
   (b) Explain JUMP and CALL instruction of 8051 microcontroller with example. Also explain inter and intra segment calls with examples. **10**

5. (a) Explain the following SFR's of 8051 :— **10**
   SCON, TCON, TMOD, PCON
   (b) Explain the interrupt structure of 8051. **10**

6. (a) Explain the register set of 8086. Also explain the flags of 8086 in detail. **10**
   (b) Explain the maximum mode of operation of 8086. **10**

7. Write short notes on :— **20**
   (a) Serial communication of 8051
   (b) Watch dog timer of PIC
   (c) Assembly directives
   (d) Jump in ~~structure~~ instruction of 8051 microcontroller.

Maths Sem IV Rev 9/5/2013

IT.

Computational Mathematics

V-A4-1st-Hf-Ex-13-E-60

Con. 6444-13. **GS-6924**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** from remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume the **suitable data** if needed with **justification**.

1. (a) A fair coin is tossed till head appears. What is the expectation of the number of tosses required. **5**

(b) Solve using Bisection method. **5**
$x - \cos x = 0$ find the positive root.

(c) Solve graphically the following L.P.P. **5**
Maximize, $z = x - 2y$
Subject to, $-x + y \leq 1$
$6x + 4y \geq 24$
$0 \leq x \leq 5, 2 \leq y \leq 4$

(d) The mean value of a random sample of 60 items was found to be 145, with standard deviation of 40. Find the 95% confidence limits for the population mean. **5**

2. (a) If p.d.f. of a random variable is given by, $f(x) = x$ $0 \leq x \leq 1$
$= 2 - x$ $1 \leq x \leq 2$
$= 0$ otherwise
Find the m.g.f. and hence find mean and variance. **6**

(b) If x_1 and y_2 are independent normal variates with mean 30 and 25 and variance 16 and 12 respectively and $y = 3x_1 - x_2$. Find $P(60 \leq y \leq 80)$ **6**

(c) Evaluate $\int_0^1 \frac{dx}{1+x}$ using **8**

(i) Trapezoidal rule (ii) Simpson's $\frac{1}{3}$rd rule (iii) Simpson's $\frac{3}{8}$th rule.

3. (a) Test significance of difference between the means of samples drawn from two normal populations with the following data :— **6**

	Size	mean	s.d.
Sample I	100	61	4
Sample II	200	63	6

(b) If $x = au + b$, $y = cu + d$ a, b, c, d are constants then prove $r_{xy} = r_{uv}$ **6**
Where r_{xy} – coefficient of corelation between x and y.

(c) Fit a second degree curve for the following data :— **8**

x	1	2	3	4	5
y	1250	1400	1650	1950	2300

[TURN OVER

4. (a) Solve using Gauss-seidel method. 6

$$10x + y + z = 12 ;\ 2x + 10y + z = 13 ;\ 2x + 2y + 10z = 14$$

(b) According to theory of proportion of commodity in the four classes A, B, C, D should be 9 : 2 : 4 : 1. In a survey of 1600 items of this commodity the numbers in four classes were 882, 432, 168 and 118. Does the survey support the theory ? 6

(c) Find the coefficient of corelation for the following data :— 8

x	2	4	5	6	8	11
y	18	12	10	8	7	5

5. (a) Let x be a random variable with p.d.f. 6

x	– 3	6	9
P(x)	1/6	1/2	1/3

Find mean, variance and also find $E(2x + 1)^2$

(b) Explain : 6

(i) Null hypothesis
(ii) Alternate hypothesis
(iii) Critical region
(iv) Level of significance
(v) Types of errors
(vi) One-tailed and two-tailed tests.

(c) Find f(8) from the data :— 8

x	5	7	11	13	17
f(x)	150	392	1452	2366	5202

6. (a) Solve : using Gauss-Jordan method $2x + y + 4z = 16;\ 3x + 2y + z = 10 ;\ x + 3y + 3z = 16.$ 6

(b) How many tosses of a coin are needed so that the probability of getting at least one head is 87·5% ? 6

(c) Solve : 8

Maximize : $z = 4x_1 + x_2 + 3x_3 + 5x_4$

Subject to : $4x_1 - 6x_2 - 5x_3 - x_4 \leq 2$

$-3x_1 - 2x_2 + 4x_3 + x_4 \leq 10$

$-8x_1 - 3x_2 + 3x_3 + 2x_4 \leq 20$

$x_1, x_2, x_3, x_4 \geq 0$

7. (a) Find mean and variance of Binomial Distribution. 6

(b) Two batches of 12 animals are taken for test of inoculation. One batch was inoculated and other was not from the data can it be regarded as effective against the discase ? 6

	Dead	Survived	Total
Inoculated	2	10	12
Non-Inoculated	8	4	12
Total	**10**	**14**	**24**

(c) Show that R = r for the following data :— 8

x	60	62	64	66	68	70	72	74
y	92	83	101	110	128	119	137	146