

S.E. (IT) (Sem-IV) Examination
5/12/13 NOV-DEC, 2013
IP

91 Con-code 4 - JP

Con. 7381-13.

(3 Hours)

LJ-10543

[Total Marks : 100

N.B. (1) Question No. 1 is Compulsory.

(2) Attempt any four questions from remaining seven questions.

1. a) Write an HTML code to create a form for customer registration for a online shopping portal.
Perform the necessary validations using Javascript. 10
(b) Write a code in Javascript to set a cookie. 05
(c) Explain the function of webserver. 05
 2. a) Write a note on client side programming and server side programming with respect to
dynamic web site development. 10
b) Differentiate between: 1) HTTP 1.1 and HTTP 1.0 2) XML and HTML 10
 3. a) Write a DHTML program to handle any three mouse events 10
b) What do you mean by session management. Explain various ways of session management 10
 4. a) What is URL, Explain working of DNS 05
b) What is web service and how it is different from Web site 05
c) Explain Servlet Life cycle in detail 10
 5. a) Explain ASP objects. Display Date and Time using ASP 10
b) Explain the stylesheets for HTML and XML. Explain the types of CSS with examples. 10
 6. a) Explain JDBC API and JDBC drivers in detail. 10
b) Explain technologies behind Web 2.0 or RIA 10
 7. Write short note on : 20
a) RSS, b) DOM, c) JSP, d) cookies.
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11/12/13

SE (I.T) Sem IV
Principles of Communication Engg.

29-10-2013-DTP-P-8-KG-11

Con. 5758 -13.

LJ-10583

(3 Hours)

[Total Marks : 100

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

1. Answer the following (any **four**) :-
 - (a) List frequency band and communication application of usable frequency spectrum. **5**
 - (b) Prove time convolution property of Fourier transform. **5**
 - (c) Define Noise figure and Noise factor. **5**
 - (d) Explain A - law and U - law companding. **5**
 - (e) Explain why FM is more Immune to Noise. **5**

2. (a) Explain FM Noise triangle. What is pre-emphasis and De-emphasis ? Explain with ckt diagram. **10**
- (b) State advantages of SSB over DSBFC. Explain filter method to generate SSB AM. **10**

3. (a) The signal $m(t) = 3 \cos (200 \pi t) + \sin (600 \pi t)$ is used to modulate the carrier $c(t) = \cos (2 \times 10^5 t)$. The modulation Index is $\mu = 0.85$. Determine the power in carrier component and in the sideband components of modulated signal. **10**
- (b) State and prove sampling Theorem for Low pass signal. What is Nyquist rate. **10**

4. (a) If the FM wave is represented by the equation $V = 10 \sin [8 \times 10^8 + 4 \sin 1000t]$. Calculate :- **10**
 - (i) Carrier frequency
 - (ii) Modulating frequency
 - (iii) Modulation Index
 - (iv) Maximum deviation
 - (v) Bandwidth
- (b) Explain with the block diagram and relevant waveforms Adaptive Delta modulation? **10**
 How does Adaptive Delta modulation reduces slope overload error and Granular Noise.

5. (a) What is Multiplexing in communication system? Draw block diagram of TDM-PCM system and explain each block. **10**
- (b) Explain the concept of Image frequency and its rejection. Discuss double spotting. **10**

6. (a) Draw and explain block diagram of basic communication system. Explain different communication channels and their characteristics. **10**
- (b) Compare ASK, PSK and FSK systems. **10**

7. Write short notes on :- **20**
 - (a) Foster - seeley discriminator.
 - (b) Energy and power signals.
 - (c) Balanced Modulator.
 - (d) Explain Friis Transmission formula.

SE | IT | IV CREW 17/12/13
NTDD

28-10-2013-DTP-P-8-KG-17

Con. 5794 -13.

LJ-10619

(3 Hours)

[Total Marks : 100

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

1. (a) Compare OSI reference model and TCP/IP model. 5
(b) Compare circuit switching and packet switching. 5
(c) Explain sliding window protocol. 5
(d) Explain X.25 protocol. 5
 2. (a) Explain different distributed computing models with the help of example. 10
(b) What is internetworking & describe devices used in the internetworking. 10
 3. (a) What is CRC ? Write the algorithm for computing checksum and explain with suitable example. 10
(b) What is RPC ? Explain implementation of RPC and stub generation. 10
 4. (a) Explain CSMA / CD with the help of example. 10
(b) What are the different types of routing algorithms ? Explain shortest path routing algorithm with the help of example. 10
 5. (a) A company is granted the site address 201.70.64.0 (class C).The company needs six subnets. Design the subnets. 10
(b) Explain different types of services in ATM. 10
 6. (a) Draw the TCP segment header and explain in detail. 10
(b) What is multiplexing & explain different types of multiplexing. 10
 7. Write short notes on following :- 20
 - (i) CORBA
 - (ii) SNMP
 - (iii) BGP
 - (iv) Network Management
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Con. 6307-13.

LJ-10469

(3 Hours)

[Total Marks : 100

- N.B. : (1) Question 1 is compulsory. Attempt any four from remaining six.
(2) Figures in right indicate full marks.
(3) Statistical table can be as per requirement.

1. (a) Two unbiased dice are thrown find expectation of sum. 5
(b) Find a root of $x^3 - 4x - 9 = 0$ using bisection method in four stages. 5
(c) A random sample of size 36 has 53 as mean and sum of squares of deviation from mean is 150. Can this sample be regarded as drawn from the population having 54 as mean. 5
(d) Max $z = x_1 + 3x_2 + 3x_3$ 5
Subject to $x_1 + 2x_2 + 3x_3 = 4$
 $2x_1 + 3x_2 + 5x_3 = 7$
Find all basic solution to the above problem.
2. (a) Using Langrange's interpolation formula to express the 6
function $\frac{3x^2 + x + 2}{(x-1)(x-2)(x-3)}$ as sum of partial fractions.
(b) The probability that a managed 60 will live upto 70 is 0.65. What is the probability 6
that out of 10 such men now at 60 atleast 7 will line upto 70?
(c) The following mistakes per page were observed in a book. 8

No. of Mistakes per page :	0	1	2	3	4	Total
No. of Pages :	17167	1861	124	2	1	19155

Fit a poisson distribution and test the goodness fit.

3. (a) Find y ^(5.4) ~~(5.4)~~ from following table :- 6

X:	5	6	7	8	9	10	11
Y:	16.25	18.43	19.84	20.70	21.15	21.24	20.98

- (b) Ten individuals are chosen at random from population and their heights are found 6
to be
63, 63, 64, 65, 66, 69, 69, 70, 70, 71 inches. Discuss the suggestion that mean
height of universe is 65 inches.

TURN OVER

Con. 6307-LJ-10469-13.

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- (c) If the probability density function is given by. 8

$$f(x) = kx^2(1-x^3) \quad 0 \leq x \leq 1$$

$$= 0 \quad \text{else where}$$

Find (i) K

(ii) $P(0 < x < \frac{1}{2})$

(iii) \bar{x}

(iv) σ^2

4. (a) Express into factorial polynomial the function. 6

$$x^4 - 8x^3 + 18x^2 - 10x$$

- (b) Using poisson distribution find approximate value of 6
- $$300C_2(0.02)^2(0.98)^{298} + 300C_3(0.02)^3(0.98)^{297}$$

- (c) Solve following LPP by simplex method :- 8

$$\text{Max } z = 4x_1 + 2x_2 + 5x_3$$

Subject to $12x_1 + 7x_2 + 9x_3 \leq 1260$

$$22x_1 + 18x_2 + 16x_3 \leq \underline{19008}$$

$$2x_1 + 4x_2 + 3x_3 \leq 396$$

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

5. (a) The marks obtained by students in a college are normally distributed with mean 65 and variance 25. If 3 students are selected at random from this college what is probability that atleast one of them would have scored more than 75 marks? 6

- (b) Using Newton – Raphson method to solve following equation. 6
- $$x^3 + x - 1 = 0$$

- (c) Fit a second degree parabola to following data and estimate the value of y for $x = 6$ 8

X:	1	2	3	4	5
Y:	25	28	33	39	46

TURN OVER

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6. (a) In a sampling a large number of parts manufactured by a machine, the mean number of defective in a sample of 20 is 2 out of 100 such samples, how many would you expect to contain 3 defective. 6
- (i) Using the Binomial distribution.
- (ii) Using the Poisson distribution.

~~was no~~

- (b) If mean of the following distribution is 16. Find ~~mean~~ and variance :- 6

M, n

X:	8	12	16	20	24
P(X = x):	$\frac{1}{8}$	m	n	$\frac{1}{4}$	$\frac{1}{12}$

- (c) Calculate the value of $\int_{0.2}^{1.4} (\sin x - \log_e x + e^x) dx$ by 8

(i) Simpson's $\left(\frac{3}{8}\right)^{\text{th}}$ rule.

(ii) Simpson's $\left(\frac{1}{3}\right)^{\text{rd}}$ rule.

(iii) Simpson's $\left(\frac{3}{8}\right)^{\text{th}}$ rule.

7. (a) Apply gauss seidal iteration method to solve the equations :- 6
- $20x + y - 2z = 17$
- $3x + 20y - z = -18$
- $2x - 3y + 20z = 25$

- (b) Find mean and variance of Binomial distribution. 6

- (c) Theory predicts that the proportion of beans in the four groups A, B, C, D should be 9:3:3:1. In an experiment among 1600 beans the number in four groups were 882, 313, 287 and 118. Does the experimental result support the theory? 8

S-E (IT) Sem IV Rev 30/11/13
Microprocessor & Microcontroller

VT-S.H.Exam. Oct(I).-13- 72

Con. 6311-13.

LJ-10509

(3 Hours)

[Total Marks : 100

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

1. Design an 8086 based system to interface following – **20**
 - (a) 128 KB RAM using 62256 chips
 - (b) 64KB EPROM using 27256 chips
 - (c) Two 16 bit input and output ports.

2. (a) Explain the addressing modes of 8051 microcontroller. **10**
(b) Explain the register file structure of PIC microcontroller. **10**

3. (a) What is the concept of mixed language programming ? Explain with example. **10**
(b) Draw and explain minimum mode operation of 8086. **10**

4. (a) Explain the hardware and software interrupts of 8051 microcontroller. **10**
(b) What are the various assemble directives of 8086. **10**

5. (a) Interface DAC with 8051 and write a program in assembly to generate triangular waveform. **10**
(b) Explain Harvard Architecture and Pipelining. **10**

6. (a) Explain following SFR's of 8051 – **10**
 SCON, TCON, TMOD, PCON.
(b) Explain following instructions of 8086 – **10**
 INT, CMP, STOS, MOV, ADC.

7. Write shor notes on :- **20**
 - (a) Serial communication of 8051
 - (b) Clock generator 8284
 - (c) Inter and Intra segment call.
