Tribhuvan University
Institute of Science and Technology
Mid-Term Exam-2082

Bachelor Level/Second Year/Fourth Semester/Science
Bachelor in Information Technology
Course: BIT251 Web Technology-I

Full Marks: 40
Pass Marks:16
Time: 2 hours

SET-B
Group – 'A'

Attempt any *ONE* Question.   [10 x 1 = 10]

1. What do you understand by the terms *element* and *attribute* in HTML? Create an HTML page with the title "MyWebIntro" and a Meta tag with name "description" having content "Learning HTML with fun". The body of the page should include a div with id mainDiv that contains an unordered list of four vegetables: Carrot, Tomato2, Potato3, and Spinach. The Spinach item should have a hyperlink to https://www.spinachworld.org. Insert a comment <!-- Spinach is healthy --> after the Spinach item. Also, use the onload() event of the body to show an alert with the message "WelcomeUser123". [2+5+3]

2. What is CSS? How CSS is inserted in a HTML page? Illustrate with examples.   [2+8]

Group – 'B'

Attempt any *SIX* Questions.   [6x 5 = 30]

3. Describe HTTP Request and Response.   [5]
4. What is CSS selector? Compare id selector with class selector.   [1+4]
5. What are HTML form events? Write HTML script that prints some texts during onchange and onfocus event of some form elements.[1+4]
6. What is HTML5? Explain any three tags of HTML5.[1+4]
7. Define CSS Box model. How would you use the CSS Box Model to create a layout with a fixed-width content area and equal padding on all sides?(1+4)
8. What do you mean by cookie? Write a Javascript code to handle cookie?[5]
9. What is a table in HTML? Create an HTML page containing a DIV with the name "divTable". The divTable should contain a table as shown below.

ID	Course	Grade
CS101	Programming	A
MA202	Calculus	B+

Bachelor Level/Second Year/Fourth Semester/Science   Full Marks: 40
Bachelor in Information Technology   Pass Marks: 16
Course: BIT252: Artificial Intelligence   Time: 2 hours

SET-B
Group – 'A'
Attempt any *ONE* Question.   [10 x 1 = 10]
Attempt any one questions. Each question carries 10 marks.

1. Explain Iterative deepening depth first search algorithm with practical example.

2. Is it possible to make a computer that think like human brain until up to now? Justify with proper reason. What is the purpose of Turing test? Describe it in detail.

Group B

Attempt any six questions. Each question carries 5 marks.

3. Define Artificial Intelligence from the THINKING RATIONALLY perspective. Give the PEAS description of the following task environment:

   a) Internet book-shopping agent.

   b) Automated Taxi

4. What do you mean by problem? Explain production system along with its architecture.

5. Define Environment and its types. Explain different types of agents..

6. Given the following knowledge base, represent it using semantic networks.

   All robin are bird

   All birds have wings

   Clyde is name of robin.

7. Write A* search algorithm. Give an example.

8. Give the state space representation of 4 puzzle problem.

9. Explain Alpha - Beta search procedure with example.

Patan Multiple Campus
Mid Term Examination-2082

Subject: System Analysis and Design   F.M.: 40

Time: 2 hrs.   P.M.: 16

Section-A
Group 'A'

Attempt any ONE Question   [10*1=10]

1. Differentiate Decision Support System and Executive Information System with their merits and demerits.
2. Draw pyramid structure of information system. Explain types of information system in detail.

Group 'B'

Attempt any SIX questions   [6*5=30]

3. What is case tools? Explain features of case tools.
4. What is agile Methodologies? Explain features of agile methodologies.
5. Explain prototyping model with block diagram.
6. What is agile Methodologies? Explain features of agile methodologies.
7. Explain prototyping model with block diagram.
8. Explain deliverable and outcomes.
9. What is information system? Explain role of information system in organizations.

Bachelor Level/Second Year/Fourth Semester/Science   Full Marks: 40
Bachelor in Information Technology   Pass Marks:16
Course: BIT254 Network & Data |Communication   Time: 2 hours

Section-A
Group A

Short Answer Question (Any One)   [1×10=10]

1. What is the advantage of layered architecture? Explain the layers of TCP/IP protocol suite in brief.

2. Explain analog and digital transmission in brief. Explain different techniques for analog to digital signal conversion with suitable example.

Group B

Short Answer Questions. (Any Six)   [5×6=30]

3. What is Nyquist Bandwidth? 8 signal levels are used for transmission of signal in a communication channel. Calculate the channel capacity using Nyquist channel capacity formula.

4. A bit stream 1001100 is transmitted using a standard CRC method. The generator polynomial is x^3+1. Show the actual bit string transmitted. Suppose the second bit from the left is inverted during the transmission. Show that the error is detected at the receiver's end.

5. Explain in brief about different network connecting devices such as Router, switch and Hub.

6. Encode the following bit stream 10011011 with: i) Manchester ii) NRZ-I iii) BPSK

7. Explain about different guided transmission medium in brief.

8. What is multiplexing? Explain different multiplexing techniques in brief.

9. Differentiate between packet switched network and circuit switched network.

Faculty: Information Technology

Bachelor Level / Second Year / Fourth Semester

Subject: Operations Research (ORS 255)

Full Marks: 40

Pass Marks: 16

Time: 3 hrs.

Group-A

Attempt any **One** questions.

2x10=20

1. Example: A veterinarian purchases rabies immunization vaccine on Monday of each week. Because of the characteristic of this vaccine, it must be used by Friday or disposed of. The vaccine cost Rs. 9 per dose and the veterinarian charges Rs. 16 per dose. In the past, the veterinarian has administered rabies vaccine in the following quantities.

Quantities used per week	No. of weeks this occurred	Probability of occurrence	Cumulative probability
2500	15	0.3	1.00
4000	20	0.4	0.70
5000	10	0.2	0.30
7500	5	0.1	0.10

Using marginal analysis determine how many does the veterinarian should order each week. If the veterinarian is offered a forecasting method costing Rs. 5000, should he purchase this model or not.

2. The following table shows the jobs of a network along with their time estimates.

Activity	Estimated duration Optimistic (t_0)	Mark likely (t_m)	Pessimistic (t_p)
1 – 2	1	7	13
1 – 6	2	5	14
2 – 3	2	14	26
2 – 4	2	5	8
3 – 5	7	10	19
4 – 5	5	5	17
6 – 7	5	8	29
5 – 8	3	3	9
7 – 8	8	17	32

(a) Draw the project network. (b) Find the expected duration and variance of each activity. (c) Calculate the earliest and latest occurrence for each event. (d) Calculate expected project length. (e) Calculate the variance and standard deviations of project.

GROUP – B

Attempts any six questions.

[6 x 5 = 30]

3. Write the objective and scopes of operations research.
4. Write the characteristics of operations research.
5. The following activities must be completed in order to complete the project. Draw network diagram to reflect the inter relationship between activities of the project. [5]

Activity	P	Q	R	S	T	U	V	W	X
Prececessor	-	-	P, Q	Q	P	R	T, U	S, U	V, W

6. The table gives below give the information about the activities, their predecessors and time duration required to complete the activities of the project.

Activity	A	B	C	D	E	F	G	H
Procecessor	-	-	A	B	A, D	B	C, E, F	G
Time in weeks	5	12	6	3	2	6	14	22

Draw the network diagram and identify the critical activities and critical path. Also find the minimum time duration required to complete the project.

7. A milk salesman estimates the probability of the demand for a litre of milk is as follows:

Demand	11	12	13	14	15
Probability	0.10	0.15	0.30	0.25	0.20

He purchases a litre of milk @ of Rs. 60 and sells it @ of Rs. 70. Prepare payoff table and find optimum stock by using EMV criteria assuming the unsold milk has no scrap value, EPPI and EVPI. [10]

8. Find the optimum strategy of the players in the following games

Player's A (Strategies)	Player's B (Strategies)		
	A	B	C
A	25	20	35
B	50	45	55
C	48	40	42

9. Consider the following pay-off matrix with respect to player A and solved it optimally.

Player's A (Strategies)	Player's B (Strategies)	
	I	II
I	9	7
II	5	11

BEST OF LUCK!!!