NORTHERN COLLEGE

B A N G L A D E S H

Department of Computer Science & Engineering (CSE)

Digital Signal Design (Subject Code: 510208)

Time- $1\frac{1}{2}$ hour

Midterm-1 Exam (10th Batch)

Full marks- 30

N.B. Answer all the questions of the following section.

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1. a) Define universal gate, Signal, Boolean Algebra 3

   b) Explain that NAND gate and NOR gate are universal gates. 4

   c) What is Encoder and Decoder? Describe them with full specification. 8

2. a) What is adder? Construct a F/A using two H/A. 4

   b) Find out the result in perfect way of Number System:
   I) (-87)-(25) II) EA3+BD9 3

   c) What is PDL, VHDL and AHDL? How are the circuits reconfigured electronically in a PLD? 8

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B A N G L A D E S H

CSE FIRST YEAR SECOND SEMESTER EXAMINATION, 2018

(Discrete Mathematics)

Subject code: CSE-510210

Time------ 1.50 hours | Mid term-1 Examination | Full Marks---30

[N.B. — The figures in the right margin indicate full marks. Answer all question]

1. a. Define Subset and the power set with examples. 4
   b. What is the Cartesian product of A={a,b,c} and B={2,3}? 3
   c. Let A, B and C be sets. Prove that, $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ and $\overline{A \cup (B \cap C)} = (\bar{C} \cup \bar{B}) \cap \bar{A}$ 8
2. a. Define Union and Intersection of two sets. 4
   b. Let A={0,2,4,6,8,10}, B={0,1,2,3,4,5,6} and C={4,5,6,7,8,9,10}. Find $(A \cup B) \cap C$ and $A \cap (B \cup C)$ 4
   c. State and proof De Morgan's Law. 7

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B A N G L A D E S H

CSE FIRST YEAR SECOND SEMESTER EXAMINATION, 2018

(Linear Algebra)

Subject code: CSE-510211

Time------ 1.50 hours | Mid term-1 Examination | Full Marks---30

[N.B. ---- The figures in the right margin indicate full marks. Answer all question]

1. $A = \begin{bmatrix} 1 & 3 & 2 \\ 2 & 0 & 3 \\ 1 & -1 & 1 \end{bmatrix}, I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

a. Define Unit matrix and Identity matrix with examples. 4

b. Find $A^3 - 2A^2 + A - 2I$ 5

c. Prove that, $\begin{vmatrix} a-b-c & -2a & 2a \\ 2b & b-c-a & 2b \\ 2c & 2c & c-a-b \end{vmatrix} = (a+b+c)^3$ 6

2. $A = \begin{bmatrix} 4 & 6 & 6 \\ 1 & 3 & 2 \\ -1 & -4 & -3 \end{bmatrix}$

a. Define Eigen Values and Eigen Vectors of a matrix. 4

b. Find the Eigen values and the associate Eigen vectors of A. 6

c. Find A^{-1} 5

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B A N G L A D E S H

CSE FIRST YEAR SECOND SEMESTER EXAMINATION, 2018

(Statistics and Probability)

Subject code: CSE-612

Time------- 1.50 hours | Mid term Examination | Full Marks---30

[N.B. ---- The figures in the right margin indicate full marks. Answer any one question]

1. a) Define statistics. Write down the characteristics of statistics. 1+3=4

b) Define exclusive class interval and inclusive class interval with example. 4

c) The earning of 39 firms for the year 2004-2005 are given bellow (in lakh taka): 10

30	42	30	54	40	48	15	17	51	42	35	41	30
27	42	36	28	26	37	54	44	31	36	40	36	22
30	31	19	48	16	42	32	21	22	40	33	41	21

Find frequency distribution table with Exclusive and inclusive class interval.

d) define sample and population with example. 3

e) What is the difference between descriptive and inferential statistics? 4

f) Write down the steps to make a frequency distribution table. 5

2. a) What do you mean by probability? Write down the difference between a priori and a posterior definitions of probability. 4

b) Define the following terms with example:- 6

i) Event; ii) independent event; iii) Dependent event; iv) Sample space.

c) A box contains 4 red , 5 white and 6 black balls. 4 balls are drawn at random from the box. Find the probability that among the balls drawn there is at least one ball of each colour. 4

d) State and prove the laws of probability. 6

e) What is conditional probability? Prove that $P(A \cap B) = P(A).P(A/B)$. 1+4=5

f) For any two non mutually exclusive events A and B, prove that $P(A \cap \overline{B}) = P(A) - P(A \cap B)$ 5

Good Luck Batch 10th

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B A N G L A D E S H

BBA FIRST YEAR SECOND SEMESTER EXAMINATION, 2018

Mid-term-I

Subject Code: 510219

CSE-10th batch

(History of the Emergence of Independence Bangladesh)

Time-------1.50 hours

Full marks:30

Part-A Short Questions

3*5=15

(Give the answer of the questions any three from part –A)

1) Describe the geographical Situation of Bangladesh.

2) Write the ways of the origin of Bengal Language.

3) What do you understand of co-ordination of Culture in Bangladesh?

4) What do you know about the Lahore Resolution of 1940?

5) Write the structure of Central and Provincial Government after creation of Pakistan in 1947.

Part-B

(Give the answer of the questions any two from Part –B)

2*7.5=15

6) What do you know about the Ethnic composition of Bangladesh?

7) Discuss the main characteristics of the Lahore Resolution.

8) Find out the causes of the division of two independence countries India and Pakistan.

9) Discuss the discrimination between East Pakistan and West Pakistan in 1947-1971.