



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 hour

Midterm-2 Exam (10th Batch)

Full marks- 20

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

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- | | |
|---|---|
| 1. a) What is Latch? Describe S-R flipflop with diagram. | 6 |
| b) Show the timing diagram of clocked J-K flipflop. | 3 |
| c) Write down the 3 differences between counter register with example | 3 |
| 2. a) Describe stepper motor control with diagram and truth table | 4 |
| b) Build a Full adder and describe it. | 4 |



NORTHERN COLLEGE

B A N G L A D E S H

Department of Computer Science and Engineering

Midterm Examination-2

Subject: Discrete Mathematics

CSE 10th Batch

Time: 1 hours

Full Marks: 20

[N.B. — The figures in the right margin indicate full marks. All questions must answer sequentially.]

1. a) Define Induction. 2
b) Why Mathematical Induction is Valid? 4
c) Use mathematical induction to show that $1 + 2 + 2^2 + \dots + 2^n = 2^{n+1} - 1$ for all nonnegative integers n. 4
2. a) Define Cartesian product with examples. 3
b) State and prove De Morgan's Law. 7



NORTHERN COLLEGE

B A N G L A D E S H

Department of Computer Science and Engineering

Midterm Examination-2

Subject: Linear Algebra

CSE 10th Batch

Time: 1 hours

Full Marks: 20

[N.B.—The figures in the right margin indicate full marks. Answer any two questions. All questions must answer sequentially.]

1. a) Find the Eigen value of $B = \begin{bmatrix} 4 & 6 & 6 \\ 1 & 3 & 2 \\ -1 & -4 & -3 \end{bmatrix}$ 3

b) Verify Cayley –Hamilton Theorem for the matrix. 4

c) Find B^{-1} using Cayley –Hamilton Theorem. 3

2. a) When a linear equation is said to be consistent or inconsistent? 3

b) Solve the equation by using matrix. 7

$$5x - 6y + 4z = 15$$

$$7x + 4y - 3z = 19$$

$$2x + y + 6z = 46$$

3. a) Define adjoint of the Matrix. 2

b) Find the adjoint of $D = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 0 & 2 \\ 4 & -1 & 0 \end{bmatrix}$ 4

c) Also verify the theorem $(adj D)D = D(adj D) = |D|I_3$ 4



NORTHERN COLLEGE

B A N G L A D E S H

CSE FIRST YEAR SECOND SEMESTER EXAMINATION, 2019

(Statistics and Probability) CSE-126

2nd mid term Examination

Full Marks---20

Time----- 1.00 hours

[N.B. ---- The figures in the right margin indicate full marks. Answer any **two** (10x2=20) questions]

1. a) Describe the various measures of central tendency

4

c) The following table shows the wages (taka) of 40 workers:-

6

Daily wages	60-80	80-100	100-120	120-140	140-160	160-180	180-200	200-220
No. of workers	8	10	15	25	13	12	9	7

i) Find frequency density and relative frequency.

ii) Draw ogive curve and hence find median and inter-quartile range.

iii) Find the no. of workers whose wages are below 125 from the ogive curve.

2. a) Differentiate between discrete and continuous variable.

3

b) The mean salary paid to 200 employees in a garment factory was found to be Tk. 2500. Later on, it was discovered that the salaries of two employees were wrongly taken as 3000 and 3500 instead of 3500 and 3200. Compute the correct mean salary.

4

c) Mention the method of primary data collection.

3

3.a) What is frequency curve? Explain difference types of frequency curve.

4

b) . In the examination of 675 candidates the examiner supplied the following information:

6

Marks obtained	Less than 10%	Less than 20%	Less than 30%	Less than 40%	Less than 50%	Less than 60%	Less than 70%	Less than 80%
No. of candidates	7	39	95	201	381	545	631	675

Calculate the arithmetic mean, geometric mean, and harmonic mean and hence show that $AM > GM > HM$.

Good Luck

Batch 10th



NORTHERN COLLEGE

B A N G L A D E S H

BBA FIRST YEAR SECOND SEMESTER EXAMINATION, 2019

Mid-term-02

Subject Code: 510213

CSE-10th batch

(History of the Emergence of Independence Bangladesh)

Time-----1.00 hour

Full marks:20

(Give the answer of any four questions)

- 1) (i) write the significance of 21 February . 03
- (ii) Write the name of four language martyrs in 1952. 02
- 2) (i) Who was Ayub Khan ? 02
- (ii) What do you know about the “Basic Democracy” of Ayub Khan . 03
- 3) Write the characteristics of military rules. 05
- 4) (i) What is nationality ? 02
- (ii) How can we resist against our cultural aggression? 03
- 5) (i) Where and who declared the six point? 02
- (ii) Write the six point in 1966. 03
- 6) Write about the Agortola Case in 1968. 05
- 7) What were the causes 1969 movement against Ayub Khan? 05