NORTHERN COLLEGE

B A N G L A D E S H

Department of Computer Science & Engineering (CSE)

Structured Programming Language (Course Code: 510201)

Time- 1.5 hour

Mid-Term (10th Batch)

Full marks- 30

N.B. Answer all the questions (1 X 30 =30)

1. a) What is SPL? Write down the basic coding structure of a C program — 1+4=5
   b) ~~Define pseudo code with example~~. Write an algorithm of finding a year is leap year or not. — 2+3=5
   c) What are operators? Describe different type of operators. — 6
   d) Write a C program to check out a number is even or odd. — 4
   e) Write a C program to find out the prime numbers from (2 to 100). — 4
   f) Describe the following concepts of C (any 3)
   i) Array ii) Data-Types iii) Flowchart iv) Functions — 2*3=6

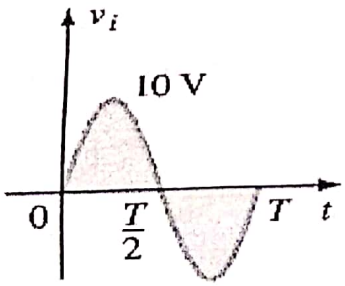
NORTHERN COLLEGE
B A N G L A D E S H

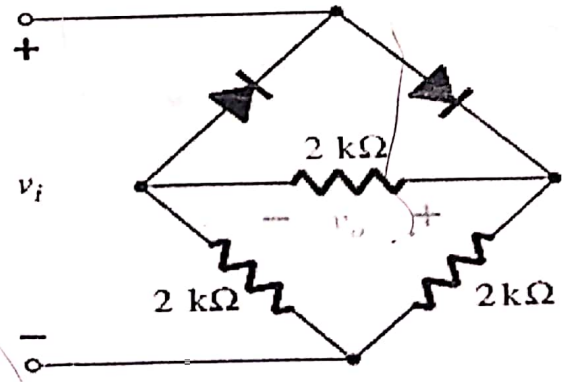
B.Sc. (HONS) IN CSE PART- I , THIRD SEMESTER EXAMINATION,2018
CSE-510202
Electrical and Electronic Circuits
Midterm Examination, June—2018
Time—1 Hour & 30 minutes
Full Marks—30

[N.B: —The figure in the right margin indicate full marks. Answer any two questions.]

1. (a) What is semi conductor material? Classify semiconductor materials. 3
   (b) Explain How n- type and p- type semiconductors are produced. 4
   (c) Describe the Operation of PN junction with characteristics curve. 4
   (d) Draw the full wave rectifier circuit and describe its operation. 4

2. (a) Describe Valence breakdown and Zener breakdown. 4
   (b) What do you understand by intrinsic and extrinsic semiconductors? Describe Energy Level With Diagram. 3
   (c) Distinguished between Conductor Semiconductor and Insulator with the help of energy level. 4
   (d) Determine the output wave form of the network of figure and calculate the output dc level. And the required PIV of each diode. 4





3. (a) What is ideal diode? 2
   (b) Draw the full wave bridge rectifier circuit and describe its operation. 6
   (c) Find out the following for half wave Rectifier. 7
   - Dc output current or average current
   - Dc voltage
   - R.M.S value of current
   - Ripple factor
   - Efficiency

NORTHERN COLLEGE

B A N G L A D E S H

Department of Computer Science & Engineering (CSE)

Subject: Calculus

Time- 1.30 hours

Mid-Term Exam (10th Batch)

Full marks- 30

Answer any three (3X 10 =30)

1.

a) Define domain and range of a function. also draw the graph of that function 10

$$F(x)=\begin{cases} x^2 & when \quad x<0 \\ x & 0\le x\le 1 \\ \frac{1}{x} & x>1 \end{cases}$$

b) Define continuity and differentiability, 10

If $F(x)=\begin{cases} 1 & when \quad x<0 \\ 1+\sin x & 0\le x<\frac{\pi}{2} \\ 2+(x-\frac{\pi}{2})^2 & \frac{x}{2}\ge\frac{\pi}{2} \end{cases}$

Discuss the continuity and differentiability at point $x=\frac{\pi}{2}$

c)

if $y=\sin(m\sin^{-1}x)$ *then show that* $(1-x^2)y_{n+2}-(2n+1)xy_{n+1}+(m^2-n^2)y_n=0$ 10

d)

State and prove mean value theorem 10

NORTHERN COLLEGE

B A N G L A D E S H

B.Sc. (HONS) IN CSE PART- I , FIRST SEMESTER EXAMINATION,2018

CSE-510205

PHYSICS

Midterm Examination, June—2018

Time—1 Hour & 30 minutes

Full Marks—30

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

1. (a) What is time dialation? derive the equation, $t = \frac{t_0}{\sqrt{1-\frac{v^2}{c^2}}}$ 1+4=5

(b) derive the equation, $m = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$ 4=5

(c) .If the kinetic energy of proton is equal to m_0c^2 finds its momentum. 3

(d) Write down the special theory of relaitvity. 2

2. (a) Derive the mass energy relation, $E=mc^2$. 5

(b) What is length contraction? derive the equation, $L = L_0\sqrt{1-\frac{v^2}{c^2}}$ 1+4=5

(c) .An astronaut at the age of 30 years went to observe the galaxy with a velocity by a spase ships and returned to earth after 50 years (as per earth calendar). What is the age of astronaut? 5

NORTHERN COLLEGE

B A N G L A D E S H

BBA FIRST YEAR FIRST SEMESTER EXAMINATION, 2018

Mid-Term –CSE. 10th batch
Subject Code: 510209
(English)
Time---1.30 hours
Full Marks----- 30

[N.B.The figures in the right margin indicate full marks. Answer all the questions from Part A and Part B]

Part A

1.Read the passage carefully and answer the questions that follow:

An intellectual is one who is an enlightened person. He has to give light to others who are in need of it . In every society we find intellectuals such as philosophers, scientists, scholars, writers and critics, and they, as enlightened men, have a great responsibility towards society . In a society all cannot be intellectuals . If a time comes when all are intellectuals. It would be a blessed time indeed: but at present, at any rate, all are not intellectuals and those who are intellectuals have the great responsibility of guiding others on to the right path. If today we have our civilization and culture , if we have order and security in life , and if our life is better than that of our primitive ancestors , it is because the intellectuals , from time to time , have been guiding humanity on the path of felicity and amity . An intellectual should come out of his ivory tower and try to elevate others to his level . This is the theme of Tennyson's famous poem. "The Palace of Art". An intellectual has the duty of seeing the truth and teaching it to others. An intellectual contemplates on the eternal laws of the universe to explore the truth. The perception of the truth is almost the same as the perception of beauty, and the duty of an intellectual is to see this truth or beauty, and to reveal it to others.

Q.a. Give the answer of the following questions : 10

i. Who are the intellectuals according to the writer?
ii. What does our society happen if all are intellectuals?
iii. What should an intellectual do for others?
iv. What have we got from the intellectuals from past to present?
v. What is the theme the poem of Tennyson, "The Palace of Art"?

Q.b. Write down the meaning of the following words in English and make your own sentences with them. (Any five) 05

Enlightened, indeed, path, primitive, theme, eternal, universe

Parts-B

Q.1. Frame Wh-questions from the following sentences. (any ~~three~~ Five) 05

i. The chairman delivered his lecture at the end of the meeting .
ii. His parents left for America yesterday .
iii. He went to the river to catch fish .
iv. The boy shouted at the top of his voice.
v. Students cannot understand him because he speaks very fast.

Q.2. Use the correct form of the verb in the following sentences. 05

i. Rajib's mother told me that Rajib always cried when he was (tell)--- to take a bath .
ii. Hasan said that Hasib (write)---------- an excellent essay .
iii. I (watch)----------television when all light went out .
iv. He never (see)----------such a wonderful sight before .
v. When Zaman (look)----------for his book , he found this old photograph.

Q.3. Write a paragraph on ; 05

i. Use and abuse of facebook or Importance of E-mail

Mid Term
1st Semester
June 2018