MID-Term Questions

Premier University
Department of Computer Science & Engineering
3rd Semester Midterm Exam, April 2019
Course Title: Basic Economics
Course Code: ECO - 201

Marks: 20 Time: 1 hour

(Answer any two questions. Figures on the right hand side indicate distribution of full marks.)

1. Assume demand and supply functions

$$Qd = 20 - 5P$$

$$Qs = 5P$$

i) Compute equilibrium price and quantity 3

ii) Show your results in diagram 2

iii) Explain the nature of disequilibrium assuming separate prices above and below equilibrium price. 2

iv) Compute the impact of a tax at the rate of 1 dollar per unit. What is the amount of tax burden on consumer? 3

2. a) Define elasticity. Graphically show different types of price elasticity of demand. 4

b) Suppose the price of a commodity falls from Rs. 10 to Rs. 9 per unit and due to this quantity demanded of the commodity increases from 100 units to 120 units. Find out the price elasticity of demand? Indicate whether the demand is elastic or inelastic. 4

c) Identify the nature of following goods elasticity?

Oar Saline, Diamond, Salt, Rice 2

3.a) Maximize the following utility functions subject to the given budget constraints.

$U = x^{0.6} y^{0.25}$, given $Px = 8$, $Py = 5$ and $B = 680$ 5

b) Graphically explain the law of diminishing marginal utility. 5

Digital Electronics
MIDTERM

Total: 20 **Time: 60**

Answer any four Questions

Q1 Express the Boolean function in a Sum of Minterms & Product of Maxterms. 5

- F(A,B,C)= AB +A'C
- F(A,B,C) = 1

Q2 What is combinational circuit? Simplify the following Boolean function to a minimum number of literals. 5

- Y + X' Z +X Y'
- X ' YZ + XZ

Q3 Implement a full- adder with two half- adder and an Or gate. 5

Q4 Simplify the Boolean function using Map in 5

a) sum of products and
b) products of sums

$$F(A,B,C,D)= \sum (0,1,2,5,8,9,10)$$

Q5 Simplify the Boolean function F using the don't –care conditions d, in 5

a) sum of products and
b) products of sums

$$F = A' B' D' + A' CD + A' BC$$
$$D = A' BC' D + ACD + A B' D'$$

Premier University, Chittagong

Department of Computer Science and Engineering

3rd Semester Mid-term Examination, April'2019

Course Code: MAT 201, Course Title: Engineering Mathematics III

Time: 50 mins, Full Marks: 20

[N.B. - (i) Answer any *two* questions;]

1 a) State and prove Cauchy-Riemann equations. 10

b) Test C-R equations for the following functions $f(z) = \frac{1}{z}$

2 a) State and Prove Cauchy's Integral Formula 10

b) Evaluate the complex integral for $\int_C \frac{\cos\pi z^2}{(z-1)(z-2)} dz$ *where C is* $|z| = 2$

3 a) Evaluate $\int_C \frac{e^{-z}}{(z+2)^5} dz$ 10

b) State and prove Cauchy's Integral theorem.

c) Prove that the function $u = x^3 - 3xy^2 + 3x^2 - 3y^2 + 1$ satisfies the Laplace's equation.

Premier University

Department of Computer Science and Engineering

CSE 3rd Semester (Sec-A) Midterm Examination, April 2019

Course Title: Object Oriented Programming

Course Code: CSE 211

***Time:* 1-hour** **Full Marks: 20**

Answer the following questions:

Q1. Fill in the blanks: 2.5

A java program is executed in two steps. First the program is compiled by Java Compiler to create a file with _____ extension with an intermediary code known as _____. Then this file is interpreted by Java interpreter also known as _____.

Q2. Why Java uses two's complement to store negative numbers? 2.5

Q3. Write down the output of the following program: 4

```
class Test{
 public static void main(String args[]){
 int nums[] = { 2, 4, 6, 8, 10 };
 for(int x: nums){
 System.out.print(x + ",");
 x = x * 10; // no effect on nums
 }
 System.out.println();
 for(int x : nums){
 System.out.print(x + " ");
 }
 System.out.println();
 }
}
```

Q4. State a scenario when the use **this** keyword is compulsory in a Java statement. Give an example of such scenario. 4

Q5. What is the main task of a constructor of a class in Java? 2

Q6. Why method overloading is an example of polymorphism in Java? Give an example. 5

Premier University
Department of Computer Science & Engineering
3rd Semester Midterm Examination, April 13, 2019
Course Code: CSE 221 Course Title: Data Structures

Total Marks: 20 **Time: 1 Hour**

1. Suppose DATA is a 25 x 4 matrix. Let Base (DATA) =250 and there are w=4 words per memory cell and programming language stores table arrays using column major order. Now find the address of DS [12, 3] 02

2.
   a. Find the table and corresponding graph for the second pattern matching algorithm where the pattern is P = abababb. 04
   b. Suppose T=aabcdabacababababbcd. Obtain P in the text T and its index no. 02

3. Sort the following numbers in ascending order using Insertion sort: 05+03=08
   44, 33, 11, 77, 55, 40, 90, 60, 22, 88, 66
   After the sorting find location of the element *50* using binary search.

4. Define sparse matrix with diagram. Suppose U is the text "JOHN STUDIES PHYSICS". Use SUBSTRING to change U so that it reads: (a) JOHN STUDIES ONLY PHYSICS. (b) JOHN STUDIES MATHEMATICS AND PHYSICS. (c) JOHN STUDIES APPLIED PHYSICS". 01+03=04