

Patuakhali Science and Technology University
Mid Term Examination

B.Sc. Engg. in (CSE) 2nd Semester, July-December 2020, Session: 2019-20

Course Code: CIT-121, Course Title: Discrete Mathematics

Time: 1 Hour

Marks: 15

1. One hundred students were asked whether they had taken courses in any of the three areas, sociology, anthropology, and history. The results were:

45 had taken sociology 18 had taken sociology and anthropology

38 had taken anthropology 9 had taken sociology and history

21 had taken history 4 had taken history and anthropology

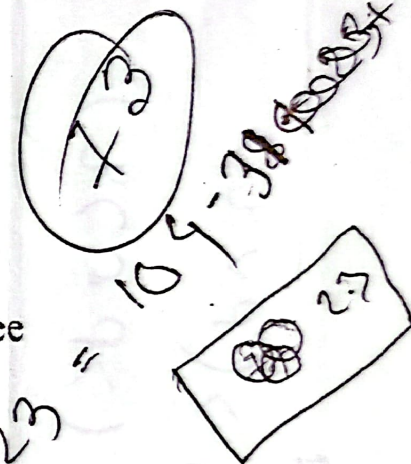
and 23 had taken no courses in any of the areas.

(a) Draw a Venn diagram that will show the results of the survey.

(b) Determine the number k of students who had taken classes in exactly (i) one of the areas, and (ii) two of the areas.

2. What is Proposition? Show that $(p \wedge q) \rightarrow (p \vee q)$ is a tautology.

3. Define Universal Quantification. Let $Q(x)$ be the Statement " $x < 2$ ". What is the truth value of the quantification $\forall x Q(x)$, whose the domain consist of all real numbers?



$$\begin{array}{r} 7 \\ 38 \\ \hline 18 \\ 20 \\ \hline 4 \end{array} \quad \begin{array}{r} 45 \\ 23 \\ \hline 22 \\ \hline 4 \end{array}$$

Dept. of Computer and Communication Engineering

Patuakhali Science and Technology University

2nd Semester (Level-1, Semester-II), Midterm Examination of B.Sc. Engg. (CSE), July-December: 2020

Course Code: CCE-121 Course Title: Object Oriented Programming

Credit Hour: 3.0 Full Marks: 15 Duration: 40 Minutes

- 1
 - a) Let say, you are wearing on your wrist one of the world's most common types of objects— a watch. Discuss how each of the following terms and concepts applies to the notion of a watch: object, attributes, behaviors, class, inheritance (consider, for example, an alarm clock), abstraction, modeling, messages, encapsulation, interface and information hiding. 4
 - b) Identify and correct the errors in each of the following statements: 2
 - i) if (c < 7); System.out.println("c is less than 7");
 - ii) if (c => 7) System.out.println("c is equal to or greater than 7");
 - c) Write declarations, statements or comments that accomplish each of the following tasks: 2
 - i) State that a program will calculate the product of three integers.
 - ii) Create a Scanner called input that reads values from the standard input.
 - iii) Declare the variables x, y, z and result to be of type int.
 - iv) Read the first integer from the user and store it in the variable x.
- 2
 - a) Create a class Rectangle with attributes length and width, each of which defaults to 1. Provide methods that calculate the rectangle's perimeter and area. It has set and get methods for both length and width. The set methods should verify that length and width are each floating-point numbers larger than 0.0 and less than 20.0. Write a program to test class Rectangle. 4
 - b) Discuss the ways in which inheritance promotes software reuse, saves time during program development and helps prevent errors. 3

Dept. of Computer and Communication Engineering
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2nd Semester (Level-1, Semester-II), Midterm Examination of B.Sc. Engg. (CSE), July-December: 2020

Course Code: CCE-122 Course Title: Object Oriented Programming Sessional

Credit Hour: 3.0 Full Marks: 15 Duration: 50 Minutes

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|----------|---|----------|
| 1 | Make a folder as your ID in the desktop and save the java file as Prob01_reg.java in that folder
Write a program that inputs five numbers, determines, and prints the number of negative numbers input, the number of positive numbers input, the number of zeros and the number of equal number input. | 7 |
| 2 | Make a folder as your ID in the desktop and save the java file as Prob02_reg.java in that folder
Write an inheritance hierarchy for classes Quadrilateral, Trapezoid, Parallelogram, Rectangle and Square. Use Quadrilateral as the superclass of the hierarchy. Create and use a Point class to represent the points in each shape. Make the hierarchy as deep (i.e., as many levels) as possible. Specify the instance variables and methods for each class. The private instance variables of Quadrilateral should be the x-y coordinate pairs for the four endpoints of the Quadrilateral. Write a program those instantiates objects of your classes and outputs each object is area (except Quadrilateral). | 8 |

Patuakhali Science and Technology University
2nd semester (L-1, S-2) Midterm Examination of B.Sc. Eng. in CSE, Session:2019-20
Course Code: MAT-121

- 1 Define point circle and Limiting point. Find the equation of circle which cuts the circle $x^2 + y^2 - 6x + 8 = 0$ and $x^2 + y^2 - 2x - 2y - 7 = 0$ orthogonally. 7
- 2 Find the inverse of the following matrix 8

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

$$(3, 0)$$

$$(1, 1)$$

$$\left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right)$$

Patuakhali Science and Technology University

Department of Physics and Mechanical Engineering

Second Semester (L-1, S-II) Class Test of B.Sc. (Engg.) in CSE, July-December: 2020, Session: 2019-2020

Course Code: PHY 121, Course Title: Physics-II

Credit Hour: 3.0, Full Marks: 15, Total Time: 45 Minutes.

Date: 02.03.2022, Time: 10:00 AM

[Figures in the right margin indicate full marks.]

1. (a) What do you understand by Fission Reactions? Explain the Fission Reactions Process with examples. 1+2
- (b) Write down the essential components of a nuclear reactor with their important functions. 4
- (c) Mention the types of Nuclear Reactors. Briefly describe the Boiling Water Reactor. 1+4
- (d) Whats are advantages and disadvantages of a Nuclear Power Plant. 3

Patuakhali Science and Technology University

2nd Semester (L-1, S-II) Class Test Examination of B.Sc. in CSE July-December 2020

Course Code: LCM 121

Course Title: Communicative English

Credit Hour: 2.0

Full Marks: 20

Duration: 1 Hour

[Figures in the right margin indicate full marks.]

Answer the following questions.

1. Make a comparative study on the reading techniques. 7.0
2. Define Topic Sentence. Describe the criteria of writing a good topic sentence with appropriate examples. 8.0
3. Correct the following statements if requires: 5.0
 - a) Patsy makes everyone doing his share around the house.
 - b) We'll have to get someone fixing the phone right away.
 - c) We are going to have our car fix before we go to Toronto.
 - d) Don't let that bothers you.
 - e) This book should help you understanding the lecture.