## MGM UNIVERSITY, AURANGABAD

### Mid Semester Examination – April. 2022

**Course: SY-B. Tech (All)**  **Sem: IV**

**Subject Name: Engineering Statistics**  **Subject Code: 20UCC401B**

**Max Marks: 20**  **Date:-04/03/2024**  **Duration:- 1 Hr.**

**Instructions to the Students:**
1. All questions are compulsory.
2. Use of Non-Programmable calculator is allowed.
3. Figures to the right indicate full marks.

(Level/ CO)

**Q. 1** **Attempt the following.**

1. The mean and mode of some data are 4 and 10 respectively, it's median will be ....  **CO1**

   (a) 1.5  (b) 5.3  (c) 16  (d) 6

2. If mean and coefficient of variation of the data set is 10 and 5 respectively, then the standard deviation is ...  **CO1**

   (a) 10  (b) 0.5  (c) 5  (d) none of these

3. A dice is thrown twice. What is the probability of getting sum divisible by three?  **CO2**

   (a) 11/36  (b) 13/36  (c) 1/36  (d) none of these

4. If X is a continuous random variable with probability density function f(x) then ... which of the following is equal to 1.  **CO2**

   (a) $\int_{-\infty}^{+\infty} f(x)\ dx$  (b) $\sum f(x)$  (c) both (a) and (b)  (d) none of these

5. Suppose 300 misprints are distributed randomly throughout the book of 500 pages. By Poisson's distribution what is the probability that a given page contains exactly 2 misprints?  **CO3**

   (a) 0.1313  (b) 0.2313  (c) 0.0988  (d) none of these

6. Suppose 10% of new scooter will require warranty service within the first month of its sale a scooter manufacturing company sales 1000 scooter in a month then standard deviation is.....  **CO3**
   (a) 100  (b) 200  (c) 10  d) none of these

**Q.2** **Solve Any Two of the following.**

(A) A cyclist pedals from his house to his college at a speed of 10 m.p.h. and back from the college to his house at 15 m.p.h. Find the average speed.  **CO1**

(B) Seven employees in a company of 20 are graduates. If 3 are selected out of 20 at random. What is the probability that there is at least one graduate among them?  **CO2**

(C) A sample of 100 dry battery cells tested to find length of life produced the following results:  CO3
M = 12 hours, σ = 3 hours
Assuming the data to be normally distributed, what percentage of battery cells expected to have life

a) more than 15 hours
b) between 10 and 14 hours.
   Given data: A(0 to 1)=0.3413, A(0 to 0.67)=0.2487

## Q. 3   Solve Any Two of the following.

**(A)** A frequency distribution of heights (recorded to the nearest inch) of 100 male students at MGM   **CO1**
University is given in the following Table. Find the standard deviation of the heights of the 100
male students at MGM University.

| Height (in) | Number of Students |
| --- | --- |
| 60–62 | 7 |
| 63–65 | 20 |
| 66–68 | 40 |
| 69–71 | 25 |
| 72–74 | 8 |

**(B)** Suppose an item is manufactured by three machines X, Y and Z. All three machines have equal
capacity and operated at same rate. It is known that the percentage of defective items produced   **CO2**
by X, Y, Z is 2, 7 and 12 percent respectively. All items produced by X, Y, Z are put into one
bin. From this bin one item is drawn at random and is found to be defective. What is the
probability this item was produced on machine Y?

**(C)** A factory finds that on an average 10% of pens produced by a machine to be defective for certain   **CO3**
specified requirement. If 10 pens are selected at random from days product. Use binomial
distribution to find the probability that
   a) exactly three pens are defective
   b) 2 or more pens are defective
   c) less than 3 pens are defective.

*** End ***

(2 of 2)

## MGM University, Aurangabad
## Mid Semester Examination – March 2024

Course: B. Tech in Electrical & Computer Engineering     Sem: IV
Subject Name: EPS-I           Subject Code: 21UEE402D
Max Marks: 20
Date:-05/03/2024
Duration:- 1 Hr.

**Instructions to the Students:**
1. All Questions are compulsory
2. Illustrate your answer with neat sketches, Diagram etc., wherever necessary
3. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

| | | CO | BL | Marks |
|---|---|---|---|---|
| **Q. 1** | **Solve any Two from following** | | | 5x2=10 |
| (A) | Draw and explain schematic arrangement of Hydroelectric power plant | CO1 | 2 | 5 |
| (B) | Write types of excitation system and explain any one in detail | CO2 | 1 | 5 |
| (C) | Discuss the various types of line supports in detail | CO3 | 2 | 5 |
| | | | | |
| **Q.2** | **Solve Any Two of the following.** | | | 5X2=10 |
| (A) | Derive the mathematical expression of String Efficiency | CO3 | 1 | 5 |
| (B) | In a 33 kV overhead line, there are three units in the string of insulators. If the capacitance between each insulator pin and earth is 11% of self-capacitance of each insulator, find (i) The distribution of voltage over 3 insulators and (ii) string efficiency. | CO2 | 2 | 5 |
| (C) | A transmission line has a span of 150 m between level supports. The conductor has a cross-sectional area of 2 cm2. The tension in the conductor is 2000 kg. If the specific gravity of the conductor material is 9·9 gm/cm3 and wind pressure is 1·5 kg/m length, calculate the sag. What is the vertical sag? | CO1 | 2 | 5 |

SY- EE -MSE -II - 23-24

## MGM University
## Jawaharlal Nehru Engineering College

### EXAM: Mid sem Exam (2023-24) Part-II

**Class:** SY (ECE)
**Subject:** Electrical machine (EM)

**Max Marks:** 20
**Duration:** 60 Minutes

**Q1:- Solve any Two Questions.**                    10 Marks

| Q.No. | Question | Marks | CO | BL |
|---|---|---|---|---|
| 1 | What is electromechanical torque? State different types of torque. | 05 | 1 | 1 |
| 2 | Discuss industrial applications of DC Motors. | 05 | 1 | 1 |
| 3 | Explain in detail reversing of speed and braking of DC Motor. | 05 | 1 | 1 |
| | | | | |

**Q2:- Solve any Two Questions.**                    10 Marks

| Q.No. | Question | Marks | CO | BL |
|---|---|---|---|---|
| 1 | What is transformer? Discuss core type and shell type transformer. | 05 | 1 | 1 |
| 2 | Derive an Approximate equivalent circuit diagram of single phase transformer. | 05 | 1 | 1 |
| 3 | What is maximum efficiency of transformer? Derive condition for maximum efficiency. | 05 | 1 | 1 |

****************************** END ***************************

SY- EE- MSE-II- 22-24

# MAHATMA GANDHI MISSION UNIVERSITY

## Mid Semester Examination – March 2024

**Program: Electrical and Computer**

**Sem: 3rd**

**Course: Data Structures**

**Subject Code: 21UEE404D**

**Max Marks:** 20      **Date:-8-3-2024**      **Duration:-** 1 Hr.

01

**Instructions to the Students:**
1. Verify that you got correct question paper.
2. Figures to right indicate full marks.
3. Assume suitable data wherever necessary.

| | | CO | BL | Marks |
|---|---|---|---|---|
| **Q. 1** | **Attempt following questions** | | | **6** |
| 1 | How can we initialize an array in C language?<br>a)int arr[2]=(10, 20)    b) int arr(2)={10, 20} c) int arr[2] = {10, 20}<br>d) int arr(2) = (10, 20) | CO1 | L | |
| 2 | 1. What is a data structure?<br><br>a) A programming language<br><br>b) A collection of algorithms<br><br>c) A way to store and organize data<br><br>d) A type of computer hardware | CO1 | L | |
| 3 | What are the disadvantages of arrays?<br>a) Index value of an array can be negative<br>b) Elements are sequentially accessed<br>c) Data structure like queue or stack cannot be implemented<br>d) There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size | CO1 | L | |
| 4 | A queue follows _____ :<br><br>a. LIFO principle    b. FIFO principle<br><br>c. Linear tree   d. Ordered array | CO1 | L | |
| 5 | The best technique for handling collision is:<br><br>a. Separate chaining      b. Double hashing<br><br>c. Linear probing          d. Quadratic probing | CO1 | L | |
| 6 | Which data structure is based on the Last In First Out (LIFO) principle?<br>a) Tree  b) Linked List   c) Stack     d) Queue | CO1 | L | |
| | | | | |
| **Q.2** | **Solve Any Two of the following.** | | | **3 X 2** |
| 1 | Differentiate between Linear and Non Linear data structures | CO1 | M | |

| | | | | |
|---|---|---|---|---|
| 2 | Write the code snippest for declaring the code of a singly linked list that stores students related data? | CO2 | M | |
| 3 | Explain the Linear Probing of open addressing. | CO1 | M | |
| **Q. 3** | **Solve Any One of the following.** | | | |
| 1 | Write a C program to insert a new code at the end of circular linked list? | CO2 | H | |
| 2 | Write a program to implement a hash function assume that the input keys are within the range 10001 and 10999. | CO1 | H | |
| 3 | What is a circular linked list? Explain the operations performed on a circular linked list. | CO2 | H | |

**Instructions to the Students:**

1. **Assume suitable data wherever necessary.**
2. Figure to the right indicate full marks.
3. Read all questions carefully.

| | | CO | BL | Marks |
|---|---|---|---|---|
| **Q. 1** | | | | 6 |
| | **1.** Which of the following is not an OOPS concept? <br> a) Encapsulation    b) Polymorphism   c) Exception   d)Abstraction | CO1 | L1 | |
| | **2.** Which of the following is not a type of inheritance. <br> a.Multiple   b.Multilevel   c.Distributed   d. Hierarchical | CO1 | L1 | |
| | 3. Which feature of OOPS derives the class from another class. <br> a) Inheritance   b) Data hiding   c) Encapsulation   d) Polymorphism | CO2 | L2 | |
| | 4.Identify the feature using which, one object can interact with another object. <br> a.Message Passing   b.Message reading   c.Data binding   d. Data transfer | CO2 | L2 | |
| | 5.Which of the following is not a Java features <br> a. Dynamic   b. Architecture Neutral   c. Use of pointers   d.Object- Oriented | CO3 | L3 | |
| | 6. Which of the following is a valid long literal <br> a. ABH8097 b. L990023 c. 904423 d. 0xnf029L | CO3 | L3 | |
| | | | | |
| **Q.2** | **Solve Any Two of the following.** | | | 3 X 2 |
| **(A)** | Define OOP and explain its basic elements . | CO1 | L1 | 3 |
| **(B)** | What are the benefits of OOP. | CO2 | L2 | 3 |
| **( C )** | Write a JAVA program to display "Hello World" | CO3 | L2 | 3 |
| | | | | |
| **Q. 3** | **Solve Any One of the following.** | | | 8 |
| **(A)** | Differentiate between polymorphism and Inheritance. | CO2 | L2 | 8 |
| **(B)** | Write down different steps of compilation and execution of Java Program | CO3 | L3 | 8 |
| | | | | |
| | **\*\*\* End \*\*\*** | | | |