MGM UNIVERSITY, AURANGABAD

Mid Semester Examination – April. 2022

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

Subject Name: Engineering Statistics

Max Marks: 20   Date:-04/03/2024   Subject Code: 20UCC401B

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.   (06 Marks)

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.   (06 Marks)

(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: M = 12 hours, $\sigma = 3$ hours
Assuming the data to be normally distributed, what percentage of battery cells expected to have life   **CO3**

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.   (08 Marks)

(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 ***

(35)

MGM University, Aurangabad
Mid Semester Examination

Course : B.Tech in Civil Engineering
Subject Name: Building Planning and Drawing
Max Marks: 20
Duration: - 1 Hr

Semester-IV
Subject Code : 20UCI403D
Date: 05/01/2024

Instructions to the Students:
1. Assume suitable data wherever necessary and state it clearly.
2. Figure to right indicate full marks
3. Q.1 is compulsory

		(CO)	(Level)	Marks
Q1	**Solve**			**1x6**
1	What is meant by FSI?	CO1	L1	1
2	What is meant by "Carpet area".	CO1	L1	1
3	List out the principles of architectural planning.	CO1	L1	1
4	Define the term "Aspect" as principle of planning.	CO1	L1	1
5	List out the principles of Building Planning?	CO1	L1	1
6	Write down the classification of Buildings?	CO1	L1	1
Q2	**Solve any Two**			**3x2**
a)	State the bylaws regarding the Road width and height of building.	CO1	L1	3
b)	Discuss the benefits of "Green Building"	CO1	L2	3
c)	Explain the necessity of Building bye-laws.	CO1	L2	3
Q3	**Solve any One**			**08**
a)	Discuss the importance of built-up area, plinth area and carpet area.	CO2	L2	
b)	Explain the building permission procedure with necessary certificates.	CO2	L2	

MGM University

Jawaharlal Nehru Engineering College, Chh Sambhajinagar

Mid Semester Examination – March 2023

Program : B. Tech in Civil Engineering **Semester : IV**

Course Name: Concrete Technology **Course Code: 20UCI406D**

Max Marks: 20   **Date: 06ᵗʰ March 2024**   **Duration: 1 Hour**

Instructions to the Students:
1. All questions are compulsory.
2. Assume suitable data wherever necessary and state it clearly.
3. Figures to right questions indicate full marks.

	QUESTIONS	CO	BL	Marks
Q. 1	**Solve the following Questions.**			6
A	Explain uses of coarse aggregate.	CO1	L1	
B	What do you mean by admixtures?	CO1	L1	
C	What ae content of cement	CO1	L1	
D	List out Bogue's Compound	CO1	L1	
E	What is Grade of concrete?	CO2	L1	
F	Explain Curing of concrete	CO2	L1	
Q.2	**Solve any TWO of the following.**			6
A	Define curing and give its classification (any 1 in detail)	CO2	L2	
B	Difference between segregation and bleeding	CO2	L2	
C	Explain about heat of hydration and method to control it	CO1	L2	
Q. 3	**Solve any ONE of the following.**			8
A	Write a short note on workability of concrete with any one test to determine it.	CO3	L3	
B	Explain with a sketch slump cone test.	CO3	L3	

*******Best of Luck******

MGM'S
Jawaharlal Nehru Engineering College
Civil Engineering Department
Academic Year 2023-4
Part – II

Course: **TY-II**   Date: 07/03/2024   Class Test- **MID SEM** **Subject Name:** AOS-I
Duration: -1 Hr.   **Max Marks: 20**

Instructions to the Students:
1. Illustrate your answers with neat sketches, diagrams etc. where ever necessary.
2. ALL Question are compulsory

		(CO)	(Level)	Marks
Q.1	Solve any three from following.			06
	a) State and explain Eddy's Theorm	CO3	L2	
	b) What are the advantageous of fixed beam?	CO2	L1	
	c) Explain the term linear or theoretical Arch	CO3	L2	
	d) What are advantages of an arch over beam	CO3	L1	
Q.2	a) For a three hinged parabolic arch shown in fig:1 determine bending moment radial shear and normal thrust at 10m from left support.	CO3	L3	6

Fig:1

Q.3	a)Draw BMD for fixed beam show in figure 2	CO2	L3	8

Fig:2

OR

b) For a continuous beam shown in fig. 3 draw BMD and SFD

Fig. :3

MGM University, Chh. Sambhajinagar

Mid Semester Examination – March 2024

Course : B. Tech in CIVIL ENGINEERING   **Semester : IV**

Subject Name: Hydraulics II   **Subject Code: 20UCI405D**

Max Marks: 20   **Date: 8ᵗʰ March 2024**   **Time: 10 am to 11 am**   **Duration: 1 Hour**

Instructions to the Students:
1. Assume suitable data wherever necessary and state it clearly.
2. Figures to right questions indicate full marks.

	QUESTIONS	CO	BL	Marks
Q. 1	**Solve the following Questions.**			**6**
A	Classify the type of flow using Froude's number.	CO1	L1	
B	Write the equation for the discharge over trapezoidal notch/weir.	CO1	L1	
C	Write the equation for the discharge over the rectangular notch/weir.	CO1	L1	
D	Give all three conditions for the most economical rectangular section.	CO1	L1	
E	Write the Chezy's formula to determine velocity in an open channel.	CO1	L1	
F	Explain – Ogee weir with sketch.	CO1	L1	
Q.2	**Solve any TWO of the following.**			**6**
A	Differentiate between pipe flow and open channel flow.	CO1	L2	
B	Derive an expression for critical depth and critical velocity.	CO1	L2	
C	An irrigation channel of trapezoidal section having sides slopes 3h:2v is to carry a flow of 10 cumecs on longitudinal slope of 1 in 5000. The channel is to be lined, for which the value of friction coefficient in Manning's formula is 0.012. Find the dimensions of the most economical section of the channel..	CO1	L2	
Q. 3	**Solve any ONE of the following.**			**8**
A	The depth of flow of water at a certain section of a rectangular channel 2.1 m wide is 0.35 m. The discharge through the channel is 1.6 cu.m/s. Determine whether hydraulic jump will occur and if so, find its height, length, strength and loss of energy per kg of water.	CO2	L3	
B	Define afflux and back water curve. Derive an expression for the length of the back water curve.	CO2	L3	

*******Best of Luck******

Jawaharlal Nehru Engineering College
Civil Engineering Department
Mid Semester Examination
Sem: IV

Course: S.Y.B.Tech in Civil Engg.
Date: 9 /03/2023
Duration:- 1 Hr.

Subject Name: Survey-II
Subject Code : 20UCI404D
Max Marks: 20

Assume suitable data wherever necessary

Figure to the right indicate full marks

		(CO)	(Level)	Marks
Solve any one of the following				5
Q. 1 a)Explain the procedure for setting out a curve by offsets from chords produced method		CO3	L2	
b) Two tangents meet at a chainage of 2052 m, deflection angle is $60^0 30'$. Calculate the necessary data for setting out a 300m radius curve if it is intended to setout the curve by Rankines method.		CO3	L2	
Q.2 Solve any one of the following				5
a) Explain the procedure for REM measurement		CO2	L2	
b) Explain the principle of measurement of distance with a total station.		CO2	L2	
Q.3 Solve any two of the following				5
A A Tachometer was set up and the following readings were obtained.		CO1	L3	

Instrument station	Staff Station	Vertical Angle	Hair Reading	Remark
A	BM	$-5^0 12'$	1.150, 1.195, 1.225	RL of BM
A	B	$+12^0$	1.030, 1.140, 1.250	251.400

Find out the horizontal distance from A to B.M and from A to B and also determine R.L of A and B, if the height of instrument is 1.1m and the constant are 100 and 0.1.

		(CO)	(Level)	Marks
B Explain Axis signal correction		CO1	L3	
Q.4 Solve any one of the following				5
a) Explain Degree of curve . Derive an expression for the same		CO3	L2	
b) Explain the method for determinig techeometric constants		CO1	L2	