Bharatiya Vidya Bhavan's

Sardar Patel College of Engineering

(A Government Aided Autonomous Institute)

Munshi Nagar, Andheri (West), Mumbai – 400058.

End Semester Examination

Total points: 100   **Date**: 18/08/2022

Duration: *2:00pm-5:00pm*

Constn- mgt.

Class: M.TECH (CM).   **Semester**: II   **Program**: Civil

Name of the Course: Project Monitoring And Control

Code : PC-MTCM-201

Instructions:
1. **Attempt any 5 questions (3 & 7 mandatory to attempt)**
2. **Provide flow charts and diagrammatic representation wherever necessary**

Q. No.		Points	CO	BL	PI
1.	a. Illustrate about Progress Report giving a sample weekly report related to any construction activity.	10	1	3	8.3.1
	b. Discuss on: Typical reports to aid progress review and explain about monthly progress report.	10	1	4	8.3.1
2.	a. Explain the 'Concept of Measuring progress at site'.	5	1	4	2.5.3
	b. Discuss various types of Project delays.	10	1	4	2.5.3
	c. Steps to be followed during project delay.	5	2	4	2.5.3
3.	a. Explain in detail Earned value concept.	5	2	3	1.4.1
	b. Describe in detail the S-Curve.	5	2	3	1.4.1
	c. A construction work had to be completed in 10 days with 50 labors at Rs, 1000/ day. At the end of 3rd day only 25% of the work was completed, with the use of 18 labors at Rs.800/day. Perform earned Value analysis and comment on performance.	10	2	4	1.4.1

No.	Question				
4.	a. What is Quality and explain quality management system in construction industry?	5	3	3	8.3.1
	b. What are the principles of quality management system?	5	3	3	8.3.1
	c. Explain in detail the Quality Control procedure.	10	3	4	8.3.1
5.	a. Give details of general precautions to be followed for avoiding accidents.	10	3	3	8.3.1
	b. Write note on safety campaign.	10	3	3	8.3.1
6.	Write Notes on:				
	a. Types of accidents on construction site.	10	3	3	1.4.1
	b. Direct cost related to accidents.	10	3	3	1.4.1
7.	a. Explain usage of any software related to project monitoring and control.	10	3	3	8.3.1
	b. Perform the Earned value analysis for the data table provided below:	10	4	2	8.3.1

Activity	Predecessor	Days	Cost/ Day	Total cost
A	-	2	300	600
B	A	3	400	1200
C	B	3	400	1200
D	B	2	200	400
E	D	3	100	300

Perform EV analysis at the end of week:

Field report at the end of day 7		
Activity	Actual % Complete	Incurred Cost
A	100	600
B	100	1400
C	33	500
D	50	200
E	0	0

Total points:100   *Cmln mgt* -

Duration: *Total Time allotted will be 3Hr.*

Class: M.TECH(CM).   Semester: II   Program: Civil

Name of the Course: **Project Appraisal, Planning and Scheduling** Course Code :
PC-MTCM-202

Instructions:

1.   **Questions no 1 & 2 are compulsory**
2.   Draw neat diagrams
3.   Assume suitable data if necessary and state the clearly.

Question No						Points	CO	BL	PI
Q1(A)	Activity i j	Activity name	t_o (in days)	t_m	t_p	10	2,3	4	2.2.3
	1-2	A	4	6	8				
	1-3	B	2	3	10				
	1-4	C	6	8	16				
	2-4	D	1	2	3				
	3-4	E	6	7	8				
	3-5	F	6	7	14				
	4-6	G	3	5	7				
	4-7	H	4	11	12				
	5-7	I	2	4	6				
	6-7	J	2	9	10				
	1. Draw the project network. 2. Find the critical path. 3. Find the probability that the project is completed in 19 days. If the probability is less than 20%, find the probability of completing it in 24 days.								
Q1(B)	Explain briefly- a. Direct Cost b. Indirect cost c. Total cost d. Normal duration e. Crash Duration and Crash Slope					10	1	2	1.2.2

Q2	Activity	Duration(weeks)	Predecessors	Resources (unit/week)	20	2,3	4	3.2.1
	A	0	----	0				
	B	2	A	0				
	C	5	A	2				
	D	3	A	2				
	E	2	B	1				
	F	6	B	2				
	G	6	C	3				
	H	6	D	1				
	I	4	D	0				
	J	2	E, F	4				
	K	7	G, F	2				
	L	3	B, H	2				
	M	2	I, B, H	4				
	N	2	J, K, L, M	0				

The activities involved in the construction of a certain project are given in Table. One resource type will be used during the contract. Determine minimum level of the resource required to complete the project.

Q3(A)	Calculate Net Present Value, Cost of Capital 10%		5	2	4	3.2.1
	Year	Cash Flow				
	0	1000000				
	1	200000				
	2	200000				
	3	300000				
	4	300000				
	5	350000				

Q3(B) Calculate Net benefit-cost ratio of a project with following details
    Initial Investment= Rs 1000000, cost of capital=12%

5   2   4   3.2.1

Benefits	Investment
Year 1	25000
Year 2	40000
Year 3	40000
Year 4	50000

Q3(C) Calculate Internal Rate of Return (IRR) with discount rate = 15%

5   2   4   3.2.1

Year	Cash Flow
0	1000000

	1	30000			
	2	30000			
	3	40000			
	4	45000			
Q3(D)	Explain Line of Balance Method with example		5	1,2	2	1.2.2

Q4(A)	Activity	Duration	10	2,3	4	3.2.1
	1-2	2				
	1-4	2				
	1-7	1				
	2-3	4				
	3-6	1				
	4-5	5				
	4-8	8				
	5-6	4				
	6-9	3				
	7-8	5				
	8-9	5				

Construct the network and locate the critical path. Calculate the various time estimates and floats.

Q4(B)	How would you practice SWOT analysis to recognize and select a project	10	1,2	3	1.2.2
Q5(A)	Deliberate the process of generating and screening the project ideas. Also explain what factors affect the project ideas along their consequences.	10	1,2	2	2.2.1
Q5(B)	Explain Different analysis carried out for Project Appraisal?	10	1,2	1	2.2.1
Q6(A)	Enumerate the stages of planning by different agencies?	10	1,2	2	1.2.2
Q6(B)	What is Work breakdown structure? Develop WBS for water treatment plant	10	1,2	2	1.2.2
Q7(A)	Why provisions for inflation and contingencies are important.	10	2,3	2	1.2.1
Q7(B)	Describe different types of budgets	10	2,3	3	2.1.1

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End-Semester- Examination August 2022

Name of the Course: Risk and Value Management

Course code: PECMTCM 202

Program: M. Tech Construction Management   Semester: II

Maximum Points: 100   Duration: 3 hr

24|8|22

Instructions:

1. **Question no.1 is compulsory, out of remaining 6 questions attempt any 4 questions**

2. Neat diagrams must be drawn wherever necessary.

3. Figures to the right side indicate full marks.

4. Assume Suitable data if necessary and state it clearly

5. **Cash flow diagram is to be drawn whenever required**

Q.No.	Questions	Points	CO	BL	PI
1(a)	Draw a template for a typical risk register for a construction project.	6	CO2	BL2	1.4.1
1 (b)	A manufacturing company purchases material worth 50 lakh every year.	8	CO1	BL3	3.1.2
	Calculate the present worth of material purchase for 5 year period: if the material price follows a geometric pattern with (a)g=-5% (b) g= 0% (c) g= 5%				
1 (c)	Explain the process of life cycle costing in Construction project.	6	CO2	BL3	2.3.1
2 (a)	You laying pipeline in a construction project which under passes the ground as well as water. List different risks which likely to occur in such project during all phases of the project	8	CO1	BL4	2.1.1
2(b)	The following matrix gives the payoff of different strategies S1,S2and S3 against conditions event N1,N2,N3 and N4 Indicate the decision taken under following	6	CO3	BL3	2.4.1

approach
(i) Pessimistic
(ii) Optimistic
(iii) Regret
(iv) Equal probability.

	N1	N2	N3	N4
S1	5000	-200	6,000	18000
S2	20,000	5500	500	0
S3	20,000	15,000	-2000	1,000

2 (c)	Discuss Sensitivity analysis with the help of example of water supply project.	6	CO1	BL3	2.1.1
3 (a)	Explain in depth the process of risk assessment along with process flow chart.	6	CO1	BL2	2.1.1
3(b)	The output of a production line a is checked by an inspector for one or more of 3 different types of defects, called defects A, B, and C.	9	CO3	BL4	2.4.1

If defects A occur, the item is scrapped. If defects B or C occur, the item must be reworked. The time required to rework a B defect is 15 minutes and the time required to rework a defect C is 30minutes. The probabilities of A, B and C defects are 0.15, 0.20 and 0.10 respectively. For ten items coming off the assembly line, determine the number of items without any defects, the number scrapped and the total minutes of rework time.
Use following random numbers for defects
Defect A: 48,55,91,40,93,01,83,63,47,52
Defect B: 47,36,57,04,79,55,10,13,57,09
Defect C: 82,95,18,96,20,84,56,11,52,03
The random numbers 00-99 are to be allocated in proportion to the probabilities associated with each of the three defects.

3 (c)	State the checklist to be used during the information phase of VEJP.	5	CO2	BL1	3.2.1
4 (a)	Three firms X, Y, and Z manufacture the same product. The selling price is Rs. 10/- per unit of the product equal for all firms.	8	CO3	BL4	2.4.1

The fixed cost for firms X, Y and Z respectively are Rs.1,00,000, Rs. 2,00,000 and Rs. 3,24,000; while the variable cost per unit are Rs. 8, Rs, 5 and Rs.4 respectively. Determine the break even points for all the firms. How much profits are earned by the firms if each of them sells70,000 units? What will be the impact on their profit if sales Increase by 20% and Decrease by 20% ?

4(b)	Define value engineering and explain its importance in construction sector.	6	CO2	BL2	1.2.1
4 (c)	Discuss the importance of insurance in risk management process.	6	CO1	BL3	1.2.1
5 (a)	L&T construction company has 3 mutually exclusive project alternatives for expanding their business	9	CO3	BL3	2.4.1

The details are as given below. Life is 10 years. Each alternative has insignificant salvage value at the end of its life. Assuming an interest rate of 20% compounded annually, find the best project alternative for expanding

the business operation of the company using annual equivalent method.

Project	Initial cost ₹	Annual Maintenance cost ₹
A1	35,00,000	9,00,000
A2	20,00,000	7,00,000
A3	30,00,000	11,00,000

5(b)	Discuss in detail various phases in value Engineering job plan.	8	CO2	BL3	3.1.1
5 (c)	Explain time value of money.	3	CO2	BL1	1.2.1
6 (a)	Explain Ergonomic Value, Aesthetic Value, Esteem value, Use Value and Exchange value.	8	CO2	BL2	1.2.1
6(b)	Check the feasibility of the project based on present worth method using i =15%	6	CO3	BL3	2.1.3
	The initial outlay= ₹ 70,00,000/-,Life of the project = 12 years Annual equivalent revenue= ₹ 20,00,000/-,Modernizing cost at the end of the 6th year = ₹ 25,00,000/-, Salvage value at the end of the life = ₹ 6,00,000/-				
6 (c)	Discuss areas of potential energy savings in Plant Design.	6	CO2	BL2	1.2.1
7 (a)	It is proposed to apply Value Engineering in the context of Bridge Construction Project. Discuss procedure to apply value engineering.	8	CO2	BL3	2.1.2
7(b)	Brief about the information required for risk management planning for a construction project.	3	CO1	BL2	2.1.2
7 (c)	The oil India Corporation is considering whether to go for an offshore oil drilling contract to be awarded in Mumbai High.	9	CO3	Bl3	2.4.1

If the bid value would be Rs. 600 million with a 65% chance of gaining the contract, they may set up a new drilling operation or more already existing operation which has proved successful, to the new site. The probability of success and expected returns are as follows:

Outcome	New drilling operation		Existing operation	
	Probability	Expected Revenue (Rs.) Million	Probability	Expected Revenue (Rs.) Million
Success	0.75	800	0.85	700
Failure	0.25	200	0.15	250

If the corporation do not bid or lose the contract, they can use the Rs. 600 million to modernize their operation. This would result in a return of either 5% or 8% on the sum invested with probabilities of 0.45 and 0.55. Assume that all costs and revenues have been discounted to the present value Construct a decision tree for the problem showing clearly the course of action. By applying an appropriate decision criteria recommend whether or not the oil India Corporation should bid the contract. What would be the financial return if they bid?

Total points: 100

Duration: *2:00pm-5:00pm*

Date: 26/08/2022

Class: M.TECH (CM).   **Semester**: II

Program: Civil

Name of the Course: Management of Construction Resources

Code : PECMTCM-211

Instructions:

1. Attempt any 5 questions (Question 1 & 7 Compulsory)
2. Provide flow charts, diagrammatic representation and examples wherever necessary.

Q. No.			Points	CO	BL	PI
1.	a.	What is ABC analysis? Solve the following problem: A construction company stores various items in the central stores. The average annual consumption and cost per unit of items stored are given. Classify the items using ABC analysis.	10	3	4	9.4.1
						8.3.1
	b.	Explain the concept of Economic Order Quantity. What are the advantages and limitation of using EOQ?	10	3	3	

Table for Q.1 a:

Name of the item	Average annual consumption(no.)	Average cost per unit (Rupees)
A	5000	45.00
B	1000	90.00
C	2000	225.00
D	4000	11.25
E	50	300.00
F	6000	62.50
G	2000	67.50
H	4000	18.75
I	50	375.00
J	250	105.00
K	200	187.50
L	50	150.00

2.	a. Short Notes on:
	   i. Staffing
	   ii. Recruiting
	   iii. Orientation and Training
	   iv. Performance Appraisal
		10	1	3	9.4.1

	b. Explain: Need of HRD in Context of Globalization. Difference between HRD and HRM.	10	1	4	
3.	a. Explain the concept of Collective Bargaining in detail.	10	1	4	9.5.1
	b. Strikes and Lockouts	10	1	4	
4.	a. What is Manpower planning? Explain the Need and Purpose of manpower planning.	10	3	3	8.3.1
	b. Illustrate the concept: Process of manpower planning. Also explain the demand forecasting methods.	10	3	4	
5.	a. Illustrate: Mechanization on Construction projects. Also explain the various sources of construction equipment.	10	2	3	8.3.1
	b. Describe in detail the concept of 'Economic life of the Equipment'.	10	2	3	
6.	Write notes on: (5 marks each) a. Codification of Materials b. Vendor analysis c. Purchase requisition forms d. Quality assurance	20	2	3	8.3.1
7.	a. Explain in detail any 3 software used in construction industry focusing on Resource Management. Also explain resource management and its importance.	10	2	3	9.4.1
	b. A construction company purchases 10,000 bags of cement annually. Each bag of cement costs Rs.200 and the cost incurred in procuring each lot is Rs.100. the cost of carrying is 25%. What is the average inventory level? Also if the lead time of procuring cement is two weeks, determine the reorder point.	10	3	4	

Total points:100

Duration: *Total Time allotted will be 3Hr.*

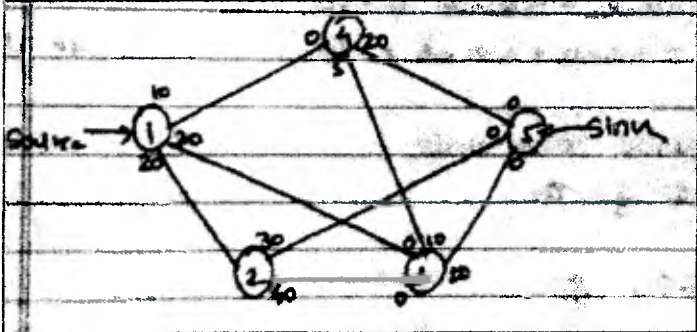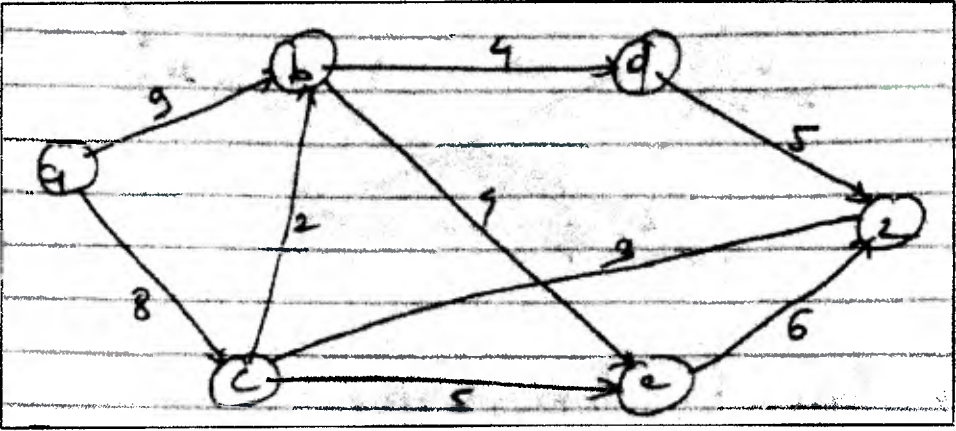Class: M. TECH(CM) & MTECH(STR) & MTECH(PEPS)   Semester: II   Program: Civil

Name of the Course-Operational Research **Course** Code : OE-PG03 PC-MTCM-202

29/8/22

Instructions:

1. **Solve Q2 OR Q5 compulsory**
2. Draw neat diagrams
3. Assume suitable data if necessary and state the clearly.

		Points	CO	BL	PI
Q1(A)	Solve Following LPP by using Kuhn-Tuckers conditions Max $Z = -X_1^2 - X_2^2 - X_3^2 + 4X_1 + 6X_2$ Subject to, X1+X2 <= 2 2X1+3X2 <= 12 X1, X2 >= 0	10	2,4	4	2.2.2
Q1(B)	There are 5 jobs, each of which must go through the machines A and B in the order AB. The processing times (in hours) are given as 	JOB	J1	J2	J3	J4	J5
MACHINE A	2	4	5	7	1
MACHINE B	3	6	1	4	8 | Determine a sequence of these jobs that will minimise the total elapsed time T. Also obtain: I) the minimum elapsed time; and ii) the idle time for each of the machines.	10	3,4	3	4.2.1
Q2	Solve following LPP by revised simplex method Max Z = X1+2X2 Subject to, X1+X2 <= 3 X1+X2 <= 5	20	1,2	4	3.2.1

	3X1+X2 < = 6 X1, X2 >= 0				

Q3(A)	If for a project, annual demand is 10000/year, order cost=300/order, carrying cost = Rs 4/unit/year then
	    1. Estimate Economic order quantity and Total cost of project
	    2. If backorder cost is 25/unit/year, then Estimate Economic order quantity and Total cost of project.
		10	2,4	4	4.3.2

Q3(B)	 Find the **maximum flow** above in the Model.	10	2,4	3	2.3.2

Q4(A)	Customers arrive at the clinic at the rate of 8/hour (Poisson's Ratio), And doctor can serve at the rate of 9/hour (Exponential),
	    1. What is the probability that customer does not join the que and walks in doctor's room?
	    2. What is the probability that there is no que?
	    3. What is the probability that there are 10 customers in the que?
	    4. What is the expected number in the system?
	    5. What is the expected waiting time in the que?
		10	3,4	4	2.3.2

Q4(B)	 The values above arrow represents flow capacity Find the maximum values for above transport network.	10	2,4	3	4.3.3

Q5	Minimise $f(x) = 7 * X_1 * X_2^{-1} + 3 * X_2 * X_3^{-2} + 5 * X_1^{-3} * X_2 * X_3 + X_1 * X_2 * X_3$ Where, X1, X2, X3 >= 0 Solve above model using geometric programming	20	1,3	5	3.2.1

<table>
<tr><td>Q6(A)</td><td colspan="6">A trader stocks a particular seasonal product at the beginning of the season and cannot re-order. The item costs him Rs. 25 each and he sells at Rs. 50 each. For any item that cannot be met on demand, the trader has estimated a goodwill cost of Rs. 15. Any item unsold will have a salvage value of Rs. 10. Holding cost during the period is estimated to be 10 per cent of the price. The probability distribution of demand is as follows:</td><td>10</td><td>3,1</td><td>5</td><td>3.2.2</td></tr>
</table>

Unit Stocked	2	3	4	5	6
Probability of demand	0.35	0.25	0.20	0.15	0.05

Determine the optimal number of items to be stocked.

Q6(B)	An organization is planning to diversify its business with a maximum outlay Rs. 4 crores. It has identified three different locations to install plants. The organization can invest in one or more of these plants subject to the availability of the fund. The different alternatives and their investment (in crores of rupees) and present worth of returns during useful life (in crores of rupees) of each of these plants are summarized in table. The first row of table has zero cost and zero return for all the plants. Hence, it is known as do-nothing alternative. Find the optimal allocation of the capital to different plants which will maximize the corresponding sum of the present worth of returns.	10	1,4	5	3.2.1

Alternatives	Plant 1		Plant 2		Plant 3	
	Cost	Return	Cost	Return	Cost	Return
1	0	0	0	0	0	0
2	1	12	2	16	2	9
3	2	15	3	20	3	12
4	3	19	4	25	-	-

Q7(A)	Activity	Duration	10	1,3	4	1.2.3
	1-2	8				
	1-3	10				
	1-4	5				
	2-7	6				
	3-4	3				
	4-5	7				
	4-7	0				
	5-6	4				
	5-7	3				
	5-8	6				

6-8	5
7-8	5

Determines all types of floats and critical Path using information given in above table.

Q7(B)

Activity	Predecessor(s)	Duration(weeks)		
		a	m	b
A	-	6	7	8
B	-	1	2	9
C	-	1	4	7
D	A	1	2	3
E	A, B	1	2	9
F	C	1	5	9
G	C	2	2	8
H	E, F	4	4	4
I	E, F	4	4	10
J	D, H	2	5	14
K	I,G	2	2	8

I)   Construct the project network
II) Find expected duration and variance of each activity
III) Find critical path and expected project duration time
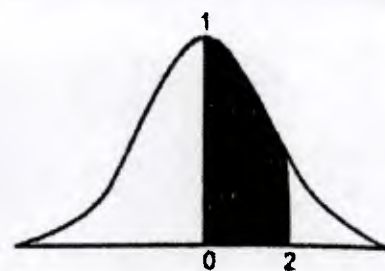IV) What is the probability of completing the project on or before 25 weeks?

If the probability of completing the project is 0.84 find expected project completion time.

10 1,3 4 1.2.3

Table 1: Area Under Normal Curve

An entry in the table is the proportion under the entire curve which is between $z = 0$ and a positive value of z. Areas for negative values for z are obtained by symmetry.

Areas of a standard normal distribution

z	.0	0.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
.7	.2580	.2611	.2642	.2673	.2903	.2734	.2764	.2794	.2823	.2852
.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990

Program: F Y M.Tech *Constn. mgt* .

Course Code:AU-PG-03; AU-MTPX201

Course Name: Disaster Management

Duration: 3 Hours

Maximum Points:100

Semester: II

30/8/22

Notes: 1. Answer any five questions.
2 All questions carry 20 points.

Q.No.	Questions	Points	CO	BL	PI
1	1.1 What is Disaster Risk Assessment? What are the seven steps in Disaster Risk Assessment?	10	4	2	2.1.2
	1.2 List out the four components of Community Risk Assessment. Explain each one of these components.	10	2	2	11.3.1
2	2.1 What are the seven Global targets of the Sendai Framework for Disaster Risk Reduction? What was the status of Target E by 2019?	10	3	2	11.3.1
	2.2 What are the four Global priorities for action of the Sendai Framework for Disaster Risk Reduction?	10	1	2	11.3.2
3	3.1 What is Disaster Mitigation? How does it differ from other disaster management disciplines/phases? What are goals of Disaster Mitigation?	10	4	2	6.1.1
	3.2 Explain structural and non-structural activities in Disaster Mitigation. What are active and passive measures in Disaster Mitigation?	10	3	2	3.1.6
4	4.1 What is the aim of Disaster/Emergency Response? List out the key activities and elements of Disaster Response.	10	3	4	3.4.1
	4.2 Explain the three Humanitarian Principles that Humanitarian agencies must observe while responding to Disasters.	10	2	3	1.2.1
Q.No.	Questions	Points	CO	BL	PI

5	5.1 What are the three levels and responsibilities of Disaster Management Authorities specified in Disaster Management Act, 2005?	10	4	2	6.1.1
	5.2 What are the objectives of the National Cyclone Risk Mitigation Project? Write a note on Phase II of NCRMP.	10	4	2	2.1.2
6	6.1 Write an explanatory note on Disaster Recovery.	10	2	2	11.3.1
	6.2 Explain 'Resilience' and 'Capacity' in the context of Disaster Management	10	3	2	11.3.1
7	7.1 Riverine flooding is perhaps the most critical climate-related hazard in India. Explain	10	1	2	11.3.2
	7.2. With the help of a diagram explain the four phases of the Disaster Management Cycle. Mark the point in the cycle where the disaster occurs.	10	4	2	6.1.1