Code No.: 70H04 | MR17

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: ENGINEERING ECONOMICS & ACCOUNTANCY

Branch: CE&ME

Time: 3 hours **Max. Marks: 60**

Answer ALL questions of the following **5x12Marks= 60Marks**

1. a) Write a note on contraction and expansion of demand curve.
   b) What are the different qualitative methods of demand forecasting?

OR

2. a) Managerial Economics bridges the gap between economic theory and business practice- Elucidate.
   b) What is meant by Joint Stock Company? Discuss the characteristics of Joint Stock Company.
3. a) Discuss the concept and application of Marginal Rate of Technical Substitution (MRTS).
   b) Explain the concept of Internal and External Economizes of Scale with suitable examples.

OR

4. Morning Delivery currently delivers breakfast packages for Rs.9 each. The variable cost is Rs.3 per package, and fixed costs are Rs.60, 000 per month. Compute the break-even point in both sales in rupees and units under each of the following independent assumptions. Comment on why the break-even points are different.

    1. The costs and selling price are as just given.
    2. Fixed costs are increased to Rs. 75,000.
    3. Selling price is increased by 10%. (Fixed costs are Rs.60, 000.)
    4. Variable cost is increased to Rs.4.50 per unit. (Fixed costs are Rs.60, 000 and selling price is Rs.9.)

5. a) Differentiate between perfect and imperfect markets.
   b) Explain the method of cost-plus pricing and state its limitations. Point out cases where it is suitable.

OR

6. a) Explain how the price is determined in case of perfect competition. Illustrate.
   b) Explain any four methods of pricing on strategy based policies
7. a) Explain various methods of estimation of fixed and working capital requirements of a company engaged in manufacturing of toys.
   b) Discuss the short term sources available for a firm to raise capital.

OR

8. a) Explain the distinguishing features of capital budgeting.
   b) The following are the cash inflows and cash outflows of an irrigation project. You are required to estimate the Net Present Value of the Project (NPV).

Year	Cash Outflow	Cash Inflows	P.V of Rs 1/- @ 12%
0	5,00,000		0
1		45,000	0.893
2		56,000	0.797
3		13,000	0.712
4		34,000	0.636
5		10,000	0.567

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III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: **ENVIRONMENTALENGINEERING**

Branch: **CE**

Time: 3 hours **Max. Marks: 60**

Answer ALL questions of the following **5x12Marks= 60Marks**

1. a) Explain the factors affecting water demand.
   b) Explain about any two types of intake structures with a neat diagram.

OR

2. a) The population of a town as received from census data is as follows :

Year	1901	1911	1921	1931	1941	1951	1961
Population	17000	22500	29000	37500	47000	57000	66500

   Forecast the population of the town for the years 2021 and 2041 by Incremental Increase method.
   b) With a neat sketch explain the functioning of an infiltration gallery.
3. Enlist different coagulants generally used for water treatment. Explain the procedure for finding out the optimum dose of Alum by "Jar test" with the help of a neat sketch.

OR

4. a) Differentiate between slow sand and rapid sand filters.
   b) Name different types of coagulants along with their advantages and disadvantages.
5. a) With neat sketches explain about Dead End & Radial system for water distribution with the help of neat sketch.

   b) Explain the equivalent pipe method.

OR

6. a) Explain about the principles involved in the solution of water distribution systems network by Hardy Cross Method.
   b) Explain different types of valves and their applicability.
7. Differentiate BOD and Ultimate BOD. An industrial waste has a 5-day BOD of 600 ppm and the k_1 value at 20° C is 0.2 per day. Find the ultimate BOD of the waste. What would be the 5-day BOD if the value of k_1 dropped to 0.1 per day?

OR

8. a) Estimate 4^{th} and 3^{rd} day BOD @ 30° C given BOD_5@20°C as 220mg/L. Assume K_{30} as 0.18 day^{-}
   b) Compare separate and combined sewerage system.

9. a) Determine the size of High rate trickling filters for the following data:

   i) Sewage flow = 8MLD

   ii) Recirculation ratio = R/I =1.6

   iii) B.O.D of raw sewage = 260 mg/lit

   iv) B.O.D removal in primary settling tank = 30%

   v) Final effluent of BOD desired = 35mg/lit

   b) Explain in details various sludge disposal methods.

OR

10. a) Give the comparison between activated sludge process and trickling filters.

    b) Design a septic tank for 100 users (assume suitable data).

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III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: DESIGN OF REINFORCED CONCRETE STRUCTURES

Branch: CE

Time: 3 hours **Max. Marks: 60**

Answer ALL questions of the following **5x12Marks= 60Marks**

1 What are the assumptions made in RC designs and obtain stress block parameters for concrete and steel?

OR

2 Design a rectangular beam at mid span having 4m simply supported clear span. It is subjected to a dead load of 10kN/m and live load of 5kN/m, use M30 grade concrete and Fe500 grade steel. Assume suitable data if required.

3 A RC beam is 280mmx550mm overall. It carries 4-16dia bars in compression and 5-25mm bars in tension each at an effective cover of 30mm. Determine the shear capacity of concrete beam if grade of concrete is M35 and grade of steel is Fe500.

OR

4 A RC beam of rectangular dimensions with width 350 mm and overall depth 700 mm is subjected to an ultimate torsional moment of 100kNm together with an ultimate BM of 200kNm. Use M20 and Fe 415 grade of concrete and steel respectively. The cover at top and bottom is 50mm and side cover of 25 mm. Design suitable longitudinal transverse reinforcement of the section.

5 A simply supported slab panel is 5mx7m and carries a uniformly distributed load of 7kN/m^2 at collapse. Determine the moment of resistance if it is same in the two directions.

OR

6 Discuss the stepwise procedure for the design of continuous rectangular slabs subjected to UDL based on IS Code method.

7 Design the reinforcement in a rectangular column of size 300 mm x 500 mm to support a design ultimate load of 500 kN, together with a factored moment of 200 kNm. Use M20 grade of concrete and Fe 415 grade of steel.

OR

8 Discuss in detail uniaxial bending and biaxial bending of columns and also discuss the interaction diagrams for different steel and concrete materials.

9. Design suitable reinforcements for a column of section 350mmx350mm supporting an axial load of 1100 kN. Design a suitable footing for column. Assume safe bearing capacity of soil as 250 kN/m^2, materials used are M25 and Fe500. Draw the cross section of the column and footing showing reinforcement details.

OR

10 Discuss what are the IS specifications required for the design of staircases. Explain the design procedure for the design

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III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: ENGLISH LANGUAGE SKILLS

Branch: **CE**

Time: 3 hours **Max. Marks: 60**

Answer ALL questions **5x12 = 60M**
All Questions carries equal marks

1. Explain oral communication with examples.

(OR)

2. 'Listening is the beginning of understanding.' Expand.

3. List out any four barriers of effective communication.

(OR)

4. Discuss the merits and demerits of non-verbal communication.

5. Discuss the essentials of effective reading.

(OR)

6. Demonstrate different types of reading.

7. 'You can make anything by writing" – Elucidate.

(OR)

8. Explain the differences between essay and letter.

9. Draft a memo to issue to the employee of XYZ Company due to delay in launch of a product.

(OR)

10. Discuss in detail the format, style and state different styles.

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Code No.: 7B159

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III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: Training and Organisational Development

Branch: **CE & ME**

Time: 3 hours **Max. Marks: 60**

Answer ALL questions **5x12 – 60M**
All Questions carries equal marks

1. Define Training. How can effective trainers be developed?

(OR)

2. Why training is essential in an organization? Briefly explain the complete process of training and development.

3. How training needs are identified? Briefly explain the methods of identifying training needs.

(OR)

4. Identify different organizational constraints for training programme.

5. a) Discuss in detail the importance of management games. Give in detail the summary to two management games.

b) What are the benefits of simulation training at workplace?

(OR)

6. Differentiate between on the job training and off the job training. Also explain which one is better and why?

7. Classify the major steps in the development of training programme. Discuss those steps in detail.

(OR)

8. What are the reasons that employees resist for training at work place? Also suggest some steps that can overcome the problem of resistance in training.

9. Explain the relevance of organizational development for manager's in today's world.

(OR)

10. a) Discuss in detail about organizational change.

b) Write about any two theories of planned change.

Code No.: 70118 **MR17**

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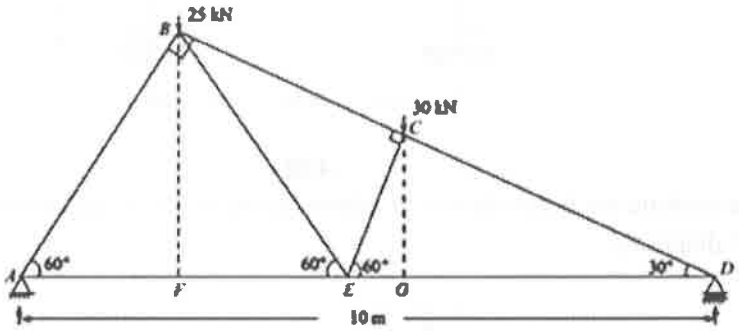
III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: Structural Analysis

Branch: **CE**

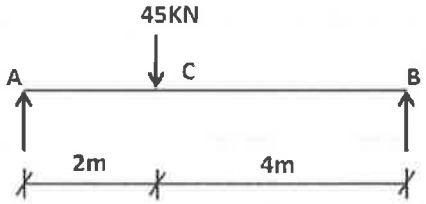
Time: 3 hours **Max. Marks: 60**
Answer ALL questions **5x12 = 60M**
All Questions carries equal marks

1. Analyze the truss given in below figure by method of sections.



(OR)

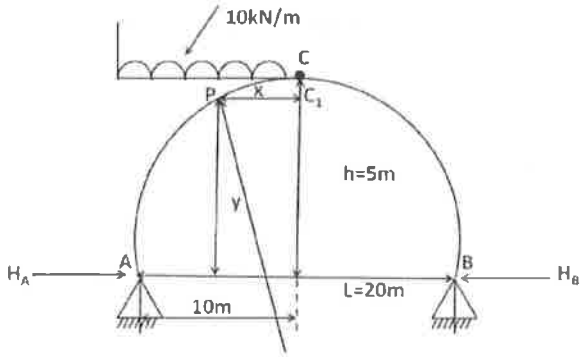
2. A simply supported beam of span 6metres is subjected to a concentrated load of 45kN at 2metres from the left support, calculate the deflection under the load. Take E=200x10^6 N/m^2 and I=14x10^{-6} m^4.



3. Determine the moments at the supports of the fixed beam ACB of span AC=3m, CB=6m which is fixed at A and B. It carries a concentrated load of 50kN at C and UDL of 50kN/m over the entire span. Draw SFD and BMD

(OR)

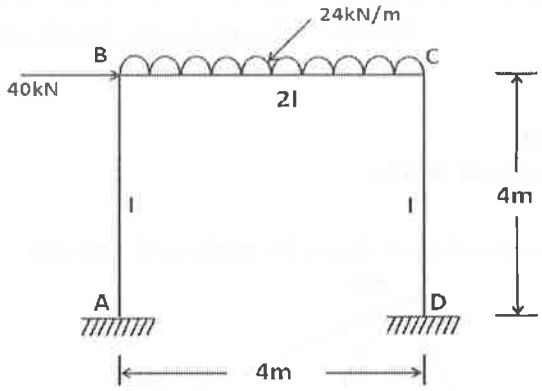
4. Derive the Clayperon's theorem of three moments using basic equations
5. A three hinged circular arch given below has a span of 20m and a rise of 5m. It carries a UDL of 10kN/m over left half span. Determine the reaction at the supports. Also find bending moment, normal thrust and radial shear at a distance of 4m from right support.



(OR)

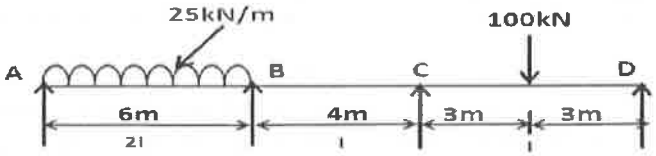
6. Explain the step by step procedure for analyzing two hinged parabolic arch with standard notations. Explain the concept of temperature change.

7. Analyze the frame given in below figure by slope deflection method and draw SFD and BMD . EI is Constant.

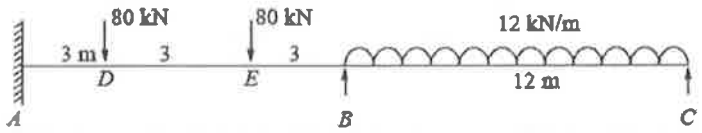


(OR)

8. Analyze the continuous beam shown in below figure by slope deflection method and sketch the SF and BM diagrams.



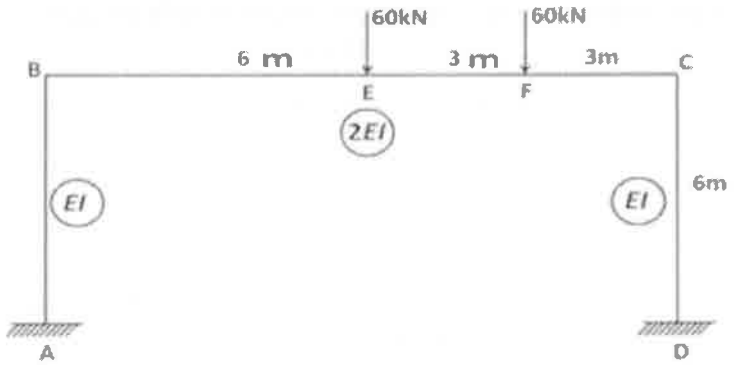
9. Analyze the continuous beam shown in below Figure by Moment distribution method sketch the SF and BM diagrams.



EI = Constant

(OR)

10. Analyze the rigid frame shown in below Figure by Moment distribution method and sketch the SF and BM diagrams.



Code No.: 70133

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III B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: DISASTER MANAGEMENT

Branch: **CE**

Time: 3 hours **Max. Marks: 60**

Answer ALL questions **5x12 = 60M**

All Questions carries equal marks

1. a) Elaborate the terms Hazard and Disaster.

   b) Explain the natural and man induced hazards and disasters in a flow chart with a suitable example.

(OR)

2. What is Disaster Management? Explain the different approaches to disaster management.
3. Illustrate the word flood? Discuss the all types, causes and control measures of floods.

(OR)

4. a) Examine the various causes, hazards & environmental impacts of volcanic eruptions.

   b) Explain briefly about Biological hazards / disasters in view of population explosion
5. Explain in detail the different stages of Disaster Management.

(OR)

6. a) Explain the role of IT in disaster Management.

b) Discuss the immediate relief measures to disaster affected people. Write various methods to predict hazards and disasters.

7. Discuss the Integrated planning methods.

   a) Education on disasters.

   b) Community Involvement.

   c) Role of media in Disaster management practices.

(OR)

8. Explain the role of institutions in disaster management.

   a) Urban & Regional planners

   b) Engineering council

   c) Industrial safety Inspectorate

   d) National Standards committee

9. a) Explain the ecological planning for sustainability & sustainable development in India.

   b) Discuss about various institutions and National centers which are involving in natural Disaster Reduction.

(OR)

10. Discuss in detail the Environmental and legislations in India, with salient features.