Code No.: **40132** **MR14**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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

IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **CE**

Subject: **Prestressed Concrete Structures**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. What is a prestressed concrete?
2. What is the effect of creep of concrete?
3. Define axial prestressing.
4. Why anchorage zone reinforcement is needed.
5. What is unpropped construction?

II. Answer All Questions **10x2Mark=20 Marks**

1. What are the advantages of Pre-stressed concrete over Reinforced cement concrete?
2. What is the basic principle of prestressed concrete?
3. What is pre-tensioning system of pre-stressing? Name any one method of pre-tensioning system of pre-stressing.
4. Explain the total losses of pre-stress allowed in the design of pre-stressed concrete members.
5. Draw different types of cable profiles.
6. What are the types of flexural failure?
7. Define bond strength
8. Outline the various methods by which bond between concrete and steel tendons can be improved.
9. What is the differential shrinkage in composite construction?
10. What is differential shrinkage?

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) Explain the limitations of prestressed concrete. (4 M)
   b) Explain the necessity of high strength concrete and high tensile steel in prestressed concrete construction

OR

2. a) Distinguish between pretensioning and post tensioning [4M]
   b) Distinguish between low, medium and high strength concrete. [6M]

3. a) List the losses in pre-tensioning system of pre-stressing with standard percentage losses. Also explain load balancing method.
   b) How do you calculate the loss of stress due to friction and wobble effect.

OR

4. a) What are the different losses in pre-tensioning and post-tensioning with standard percentage losses.
   b) How do you calculate the loss of stress due to shrinkage of concrete?

5. Write the difference between concentric and eccentric tendons with their practical applications.

OR

6. Distinguish between a curved cable and a parabolic cable.

7. Write short notes on:
   (a) Anchorage reinforcement (b) End zone stresses

OR

8. The end block of a prestressed concrete beam is 150 mm wide and 300 mm deep, supports an eccentric prestressing force of 150 kN, the line of action of which passes at 50 mm from the soffit of the beam section. The depth of the anchor plate is 150 mm. Determine the magnitude and position of the principal tensile stress on a horizontal plane passing through the centre of the anchorage plate.

9. The composite T beam is made up of a pre-tensioned rib 100 mm wide and 180 mm deep and a cast in situ slab 400 mm wide and 35mm thick having a modulus of elasticity of 28 KN/mm^2. If the differential shrinkage is 100 x10^{-6} units, determine the shrinkage stresses developed in the precast and cast in situ units

OR

10. A concrete beam with a rectangular section 250mmx500mm is pre-stressed by two post tensioned cables of area 450 mm^2 each, initially stressed to 1200 N/mm^2. The cables are located at a constant eccentricity of 80 mm throughout the length of the beam having a span of 8m.The modulus of elasticity of steel and concrete is 200 and 38 KN/mm^2 respectively.
    a) Neglecting all losses, find the deflection at the centre of span when it is supporting its own weight.
    b) Allowing for 15% loss in pre-stress, find the final deflection at the centre of span when it carries an imposed load of 12 KN/m.

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IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **CE**

Subject: **Construction Management**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. What are the applications of construction management?
2. Who introduced CPM and PERT?
3. Write about various forms of scheduling
4. What is the importance of measurement books.
5. How do you do hazard identification?

II. Answer All Questions **10x2Mark=20 Marks**

1. What is the difference between strategic management and strategic implementation
2. What is the importance of communication skills for a project manager?
3. What is head and tail of a network diagram?
4. Draw a typical cost-duration curve and show on it optimum duration and minimum project cost.
5. Classify different types of estimation?
6. What is a purchase order in the construction project?
7. What is meant by contract closure?
8. What do you mean by security deposits?
9. Define welfare legislation
10. What law applies for fire and explosion?

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) Discuss the principles of management.
   b) Write the difference between management and organization.
   c) What are the qualities of a project manager

OR

2. Explain about line and staff organization

3. Explain briefly different activities involved in construction management?

OR

4. a) In an examination, 70 boys were involved and the marks scored by them out of a possible hundred are given in Table 1. Draw a histogram for this case. For the horizontal axis, choose ranges in steps of 5, i.e., 20, 25, 30, and so on. Observe how individual characteristics are brought out.

76	53	64	40	56	60	61
62	30	34	44	38	58	72
39	43	44	54	76	38	42
36	46	63	57	27	48	59
45	53	35	32	47	58	36
63	55	53	44	52	46	51
47	64	54	65	56	65	68
56	66	69	59	67	52	58
44	55	21	64	22	72	37
81	74	84	42	41	75	55

b) PERT calculations yield a project length of 50 weeks, with a variance of 16. Within how many weeks would you expect the project to be completed with probability of i) 95% (ii) 75% and (iii) 40% ?

5. a) The construction industry is facing a severe shortage of skilled man power – Discuss with particular examples.
   b) Explain in detail about planning of manpower and material.

OR

6. a) Define Resource allocation and explain it in details.
   b) List out resources of construction work.

7. How do you prepare notice inviting tenders?

OR

8. a) What is the importance of contracts administration/management?
   b) What is the purpose of the following documents in a construction contract?
   (i) General conditions, (ii) Special conditions, (iii) Addenda and (iv)Technical specifications

9. a) Explain about legal and financial aspects of accidents in construction
   b) Write about labor regulations and social securities.

OR

10. What are the safety measures to be taken in construction industry?

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IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **CE**

Subject: **Solid Waste Management**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. What does it meant by Solid Waste Management?
2. What is hand sorting?
3. List out the Biomedical waste generation sources?
4. What is significance of temperature in composting?
5. What is Recycling?

II. Answer All Questions **10x2Mark=20 Marks**

1. What are the sources of domestic solid waste
2. What do you mean by sampling of waste?
3. What is mean by segregation?
4. When to use "Stationery Container System" of waste collection?
5. How incineration helps in reducing pollution?
6. What are the factors need to consider while considering incineration?
7. What vermi-composting and how it forms?
8. What is leachate?
9. Draw the pyramid of Waste Hierarchy.
10. What is the need to implement 5R's in our life?

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) Explain the adverse health and environmental impacts due to improper handling of MSW.
   b) Enumerate the classification of solid wastes based on its composition and characteristics.

OR

2. a) Explain the material flow and waste generation in technology using flow chart.
   b) Explain the effects of technological advances in solid waste management.

3. Explain the steps in assessing the need for a transfer station. List the facilities expected at a transfer station.

OR

4. a) Explain the types of waste collection systems based on their mode of operation with a neat sketch.
   b) Write detailed note on the nuisance caused by garbage loaded open trucks on high way.

5. a) Explain the difference between compaction and size reduction and their importance in solid waste management.
   b) Explain the types, mode of action, and applications of equipments used for size reduction and component separation in detail.

OR

6. a) Discuss the important aspects to be considered in the site selection for a waste processing and disposal facility
   b) What is the processing of solid waste at commercial and Industrial facilities?

7. a) Briefly outline the different waste to energy options for management of solid and hazardous waste.
   b) What are the important factors affecting composting? How they are controlled during composting?

OR

8. Explain the various phases of MSW decomposition in a closed landfill cell.

9. What is solid waste management? Explain the functional elements of solid waste management.

OR

10. a) Discuss the different options for source reduction of wastes?
    b) Discuss the need for an Integrated approach to solid waste management, clearly and bring out the key elements, different aspects and major stakeholders.