Code No.: **30120 /40120**

MR13 & MR14

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 II SEMESTER SUPPLEMENTARY EXAMINATIONS, APRIL-2019

Subject: **Steel Structures Design and drawing**

Branch: **CE**

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

Note: Assume suitable data whenever necessary. Use of IS 800-2007, Steel Tables & IS-875-Part-3 is permitted.

PART – A

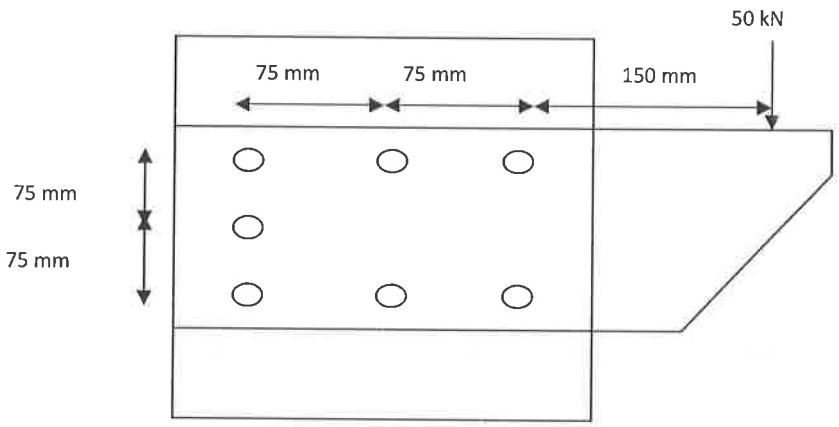
Answer any **ONE** questions of the following **1x30 MarkS=30 Marks**

1. Design a laced column which is subjected to an axial load of 500 KN. Column which is held in position but not restrained against rotation at both ends. Length of column is 6m. Steel of grade Fe-410, grade of bolt is 4.6. Channels facing back to back ['C' Channel section] Draw front view, side view and sectional view.
2. Design a simply supported plated rolled steel beam section to carry a uniformly distributed load of 30KN/m inclusive of self weight. Effective span of the beam is 4m. The depth of the beam is not to exceed 450mm. The compression flange of the beam is laterally supported? Draw front view, side view and sectional view.

PART-B

Answer any **THREE** questions of the following **3x15 Marks= 45Marks**

1. Calculate the strength of a 20mm diameter bolt of grade 4.6 for the following cases. The main plates to be jointed are 12mm thick.
   a) Lap joint.
   b) Single cover butt joint; the cover plate being 10mm thick.
   c) Double cover butt joint; each of the cover plates being 8mm thick.
2. Explain the various factors affecting the strength of tension members?
3. Determine the maximum load in the rivets of the eccentric connection shown in figure below.



4. Design the central cross section of the plate girder for 20 m span simply supported and carrying uniformly distributed load (UDL) of 50 KN/m. Design curtailment of flange plates provides minimum 3 plates at the centre of the span.
5. a) Explain factors affecting selection of the type of truss with neat diagrams. **8M**
   b) Explain the various loads to be considered for design of roof truss. **7M**

Code No.: **40122** | **MR14**

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2019

Subject: **Transportation Engineering-I**

Branch: **CE**

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

PART – A

I. Answer **ALL** questions of the following **5x1Mark=5 Marks**

1. Define Central road fund.
2. Define Stopping sight Distance
3. List out the different types of parking facilities?
4. What are the types of intersections?
5. What are the main types of Pavements?

II. Answer **ALL** questions of the following **10x2Marks=20 Marks**

1. What are the recommendations of Jayakar committee?
2. Explain about road development in Mughal period?
3. Write about Road Margins?
4. Define transition curve with neat sketch?
5. What is meant by ADT & AADT?
6. Write about basic studies of Traffic volume studies?
7. What are the advantages of over-pass?
8. Give the advantages of rotary intersection?
9. Draw the cross-section of flexible and rigid pavement with the help of neat sketches.
10. Explain about co-efficient of thermal expansion in Rigid pavement design.

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. Discuss about the various surveys to be organized in finalizing the highway alignment?

(OR)

2. a) Write in detail about classification of Roads.
   b) Explain in detail about Obligatory points with neat sketches.
3. a) Design the super elevation required at a horizontal curve of radius 250m for a design speed of 100k mph. Give the various standard values of Super elevation for different locations as per IRC.
   b) Derive an expression for extra widening on horizontal curves.

(OR)

4. a) What are the factors which influence the width of carriage way? What are the recommended widths of carriage way for single lane, double lane, and multi lane highways according to IRC?
   b) Draw the cross-sectional elements of Highway in Embankment?
5. a) What are the various applications of spot speed studies?
   b) What is procedure for designing traffic signal by Webester's method?

(OR)

6. Explain about the manual method, mechanical method and video graphic method of Conducting traffic volume studies.
7. Discuss about the elements to be considered in the design of traffic island.

(OR)

8. a) What situations justify the requirements of grade separated intersections?
   b) What are the basic forms of at grade – intersection? Give sketch showing the details of each type.
9. a) Explain the CBR method of flexible pavement design. What are its limitations?
   b) The CBR-value of a sub grade is 6%. The cumulative standard axle value is 40msa.Using IRC guidelines, determine the total thickness of construction above the sub grade.

(OR)

10. Explain the design procedure of flexible pavement by IRC: 37-2012

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MR14

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2019

Subject: **Environmental impact assessment and Management**

Branch: **CE**

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

PART – A

I. Answer **ALL** questions of the following **5x1Mark=5 Marks**

1. What are adhoc methods?
2. What are the major sources of soil pollution.
3. What is an aquifer?
4. What is management audit?
5. What is wild life Act.

II. Answer **ALL** questions of the following **10x2Marks=20 Marks**

1. Write a short note on Environmental Resources.
2. Discuss how to assess impact significance.
3. What is the impact of development on vegetation and wild life.
4. Write the sources of water pollution.
5. What is the relationship between land use and air quality?
6. Discuss impacts of industrial activities over air environment.
7. Write a brief note on audit protocol.
8. Define waste minimization act?
9. Discuss the objectives of water act.
10. What are the impacts of idol immersion in water?

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. What is the basic concept of EIA? Give the criteria for the selection of EIA methodology.

OR

2. a) List out different EIA methods. Explain Checklist method in detail.
   b) What are stepped up matrix methods and networks methods?
3. Explain the methodologies for the assessment of impacts on soil and ground water.

OR

4. Discuss the methodology for the prediction and assessment of impact of soil and ground water in detail.
5. Discuss about environmental indices for air and surface water quality

OR

6. a) Discuss the loading factors to be considered for protecting the quality of receiving water bodies.
   b) Discuss the principal and main aims of any impact mitigation. Program for mitigating biological impacts of any developmental projects
7. Explain the following:
   a) Health and safety audit. b) What is the EIA legislative policy?

OR

8. a) Write a note on Preparation of Audit Report
   b) Write a note on Environmental legislation
9. Explain various salient features and objectives of Air (Prevention & Control of pollution Act.)

OR

10. Write a note on integration of environmental concerns in mining projects.