

Hall Ticket No:

Question Paper Code: 14CE110

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year I Semester (R14) Regular & Supplementary End Semester Examinations – Nov / Dec 2018

HIGHWAY ENGINEERING

(Civil Engineering)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

- Q.1
- i. What is the full name of IRC? 1M
 - ii. State different types of road patterns. 1M
 - iii. Define Stopping Sight Distance. 1M
 - iv. What do you mean by Vertical Alignment of a road? 1M
 - v. How do you calculate the speed of any vehicle? 1M
 - vi. Mention the importance of Reaction time of a driver. 1M
 - vii. How many types of road intersections are there? 1M
 - viii. What is At grade intersection? 1M
 - ix. Define viscosity of bitumen. 1M
 - x. What is the full form of AASHTO? 1M

- Q.2(A) What are the factors controlling the selection of highway alignment? Explain it, with sketches 10M

OR

- Q.2(B) Explain the different engineering surveys to be carried out for deciding the highway alignment? 10M

- Q.3(A) Explain in detail, the highway cross sectional elements. 10M

OR

- Q.3(B) What is Super elevation? Why it is important? And how it is designed? 10M

- Q.4(A) Describe the Causes, Consequences and Preventive measures for Road Accidents. 10M

OR

- Q.4(B) Explain how signal can be designed by using Webster's method and IRC method. 10M

- Q.5(A) What are the different conflicts present at intersections and explain with neat sketches. 10M

OR

- Q.5(B) Explain the concept of Rotary intersections with advantages and disadvantages. 10M

- Q.6(A) Describe the tests to be conducted on aggregates for determining the Strength and Hardness properties. 10M

OR

- Q.6(B) What are the requirements of an ideal pavement? 10M

*** END***

Hall Ticket No:

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Question Paper Code: 14ENG103

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B. Tech III Year I Semester (R14) Regular & Supplementary End Semester Examinations – Nov / Dec 2018

SOFT SKILLS

(Common to CE, ME & CSE)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

Answer either A or B only from Q.1 to Q.5

Q.1(A) Explain Verbal and Non Verbal Communication. 12M

OR

Q.1(B) Write short notes on a) Importance of Feedback in work place 12M

b) Conversation starting and building Techniques

Q.2(A) Write a note on developing assertive skills, self-confidence, and emotional intelligence? 12M

OR

Q.2(B) Explain the attributes of a successful team. 12M

Q.3(A) Define the stages involved in Effective Presentation 12M

OR

Q.3(B) What is the objective of conducting GDs for recruitment? What are the general types, Dos and Don'ts and different roles of the participants in a GD? 12M

Q.4(A) Is CV and Resume' similar? Explain a few tips to write a winning Resume'? 12M

OR

Q.4(B) What are the techniques involved in handling interviews? 12M

Q.5(A) Define Etiquette? Describe Dining etiquette in detail 12M

OR

Q.5(B) Describe email etiquette? 12M

*** END***

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

B.Tech III Year I Semester (R14) Regular & Supplementary End Semester Examinations – Nov / Dec 2018

HYDROLOGY & WATER RESOURCES ENGINEERING

(Civil Engineering)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

- | | | |
|--------|--|--|
| Q.1 | i. Define W-index.
ii. Define leaching.
iii. Explain Potential Evapotranspiration.
iv. Define Pigmy meter.
v. Describe Drawdown.
vi. Distinguish hydrologic and hydraulic channel routing.
vii. Explain attenuation.
viii. Describe Specific yield of aquifer.
ix. Define regime channel.
x. Distinguish main advantage of double ring infiltrometer with respect to single ring infiltrometer. | 1M
1M
1M
1M
1M
1M
1M
1M
1M
1M |
| OR | | |
| Q.2(A) | i. Explain the term "initial loss" from rainfall. Elaborate the different components.
ii. Define infiltration. Explain main factors that affect infiltration. Steps for the measurement of infiltration in the field. | 5M
5M |
| OR | | |
| Q.2(B) | Explain the various commonly used methods of recording rainfall with neat sketches. . Indicate for each method its specific advantage and the conditions under which one would use it. | 10M |
| OR | | |
| Q.3(A) | In a 140-min storm the following rates of rainfall were observed in successive 20-min Intervals: 6.0, 6.0, 18.0, 13.0, 2.0, 2.0 and 12.0 mm/h. Assuming ϕ -index value as 3.0 mm/h and an initial loss of 0.8 mm. determine the total rainfall, net runoff and W-index of the storm. | 10M |
| OR | | |
| Q.3(B) | i. Explain runoff. Elaborate the different components of Runoff. Draw a neat sketch and identify the components.
ii. Discuss the main affecting parameters of Runoff. | 5M
5M |
| OR | | |
| Q.4(A) | i. Draw and describe different zones of ground water.
ii. A 30cm diameter well completely penetrates a confined aquifer of permeability 45 m/day. The length of the stainer is 20m. Under steady state of pumping, the draw down at the well was found to be 3m and the radius of influence was 300m. Calculate the discharge. | 5M
5M |
| OR | | |
| Q.4(B) | i. Define Unit Hydrograph. Discuss the basic assumptions of Unit Hydrograph theory.
ii. If a 2-h unit hydrograph of triangular shape has time base of 28 hours and peak flow of 20m ³ /s, find out the total runoff due to 3cm storm in 2 hours. | 5M
5M |

- Q.5(A) A 100 ha watershed has the following characteristics: Maximum length of travel of water in the catchment=3500m, Difference in elevation between the most remote point on the catchment and the outlet=65m, Land use: 10M

Land use/land cover	Area (ha)	Runoff coefficient
Forest	30	0.25
Pasture	10	0.16
Cultivated land	60	0.40

The maximum intensity-duration-frequency relationship for the watershed is given by

$$i = \frac{3.97T^{0.165}}{(D + 0.15)^{0.733}}$$

Where, i = intensity in cm/h, T = Return period in years and D = duration of rainfall in hours. Estimate 25 year peak runoff from the watershed that can be expected.

OR

- Q.5(B) (i) Describe Flood Routing. 10M
(ii) Distinguish different types of flood routing.
(iii) Explain methods used for flood routing.

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- Q.6(A) Design a regime channel for a discharge of 50 m³/s and silt factor 1.1 using Lacey's theory. Assume any other data if required. 10M

OR

- Q.6(B) Define the term water logging. Describe the ill effects of water logging. Discuss in detail. 10M

*** END***

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(UGC-AUTONOMOUS)

B.Tech III Year I Semester (R14) Regular & Supplementary End Semester Examinations – Nov / Dec 2018

ANALYSIS OF STRUCTURES - II

(Civil Engineering)

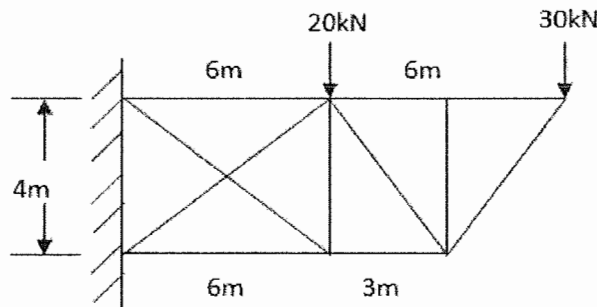
Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

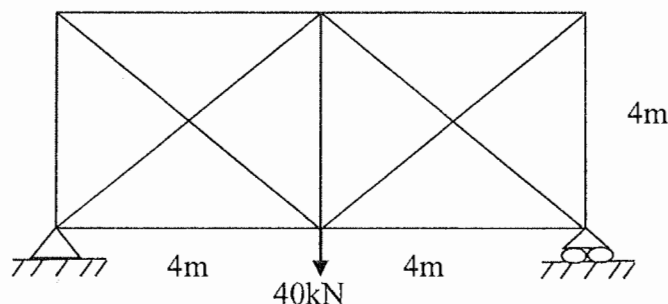
- Q.1
- | | | |
|-------|---|----|
| i. | Define static indeterminacy . | 1M |
| ii. | What is degree of kinematic indeterminacy? | 1M |
| iii. | What is the type of force carried by members of a truss? | 1M |
| iv. | What is rotation factor in Kani's method. | 1M |
| v. | What is the relation between flexibility and stiffness matrix? | 1M |
| vi. | Name an approximate method used for analyzing frames for lateral loads. | 1M |
| vii. | What is normal thrust and radial shear in arches. | 1M |
| viii. | What is the basic advantage of an arch over a beam? | 1M |
| ix. | What is the effect of temperature change on an arch? | 1M |
| x. | Differentiate between the cable and arch. | 1M |

- Q.2(A) Determine the forces in all the members of a truss shown in Figure. Take L/A as constant. 10M



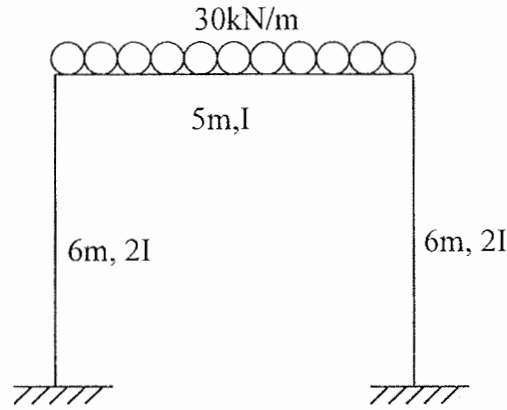
OR

- Q.2(B) Determine the forces in all the members of a truss shown in Figure. Take areas as 2000mm^2 for vertical and horizontal members, and 3000mm^2 for diagonal members. Assume constant modulus of elasticity. 10M



Q.3(A) Analyse the frame shown in the figure by Moment distribution method.

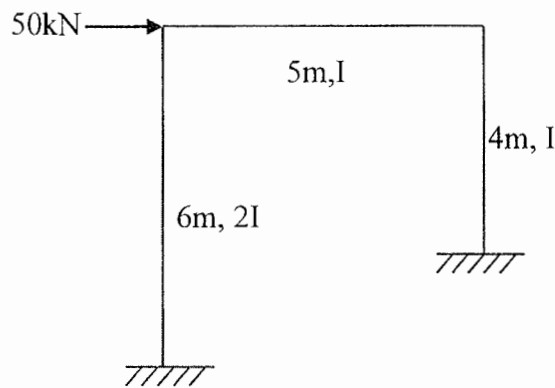
10M



OR

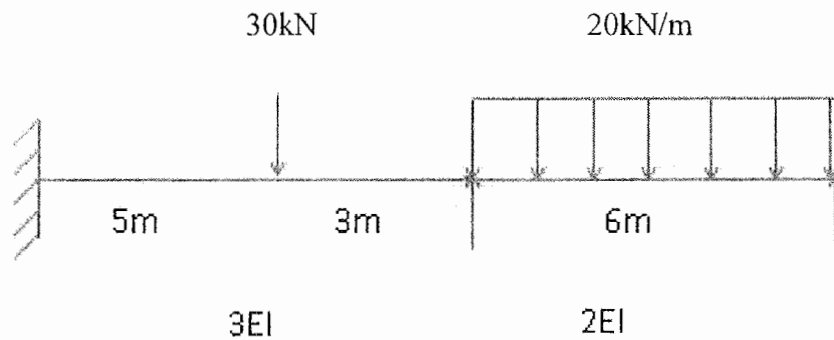
Q.3(B) Analyse the frame shown in the figure by Kani's method

10M



Q.4(A) Analyse the continuous beam shown in figure by flexibility method.

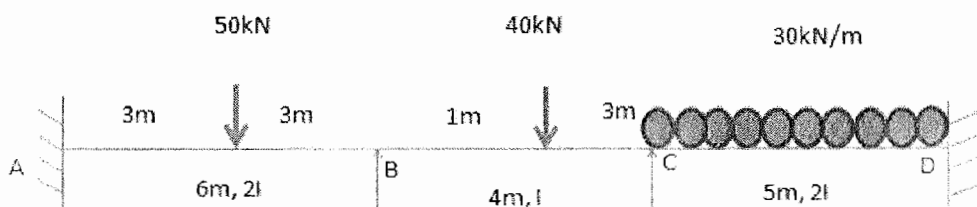
10M



OR

Q.4(B) Analyse the continuous beam shown in Figure by stiffness method

10M



- Q.5(A) i). Derive the expression for the effect of temperature in a two hinged arch. 10M
(ii) How will the formula modify when rib shortening is considered.
(iii) Explain the summation procedure for determining horizontal thrust in a two hinged arch

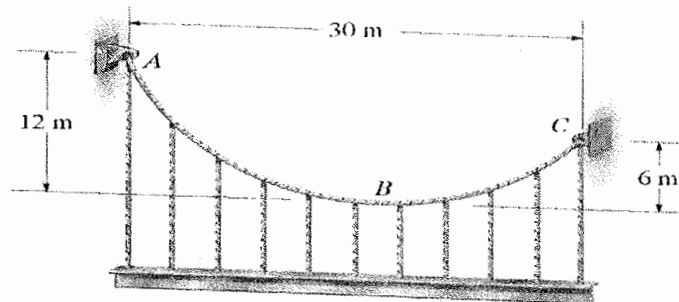
OR

- Q.5(B) A two hinged parabolic arch has a span of 50m and rise 12m. A concentrated load of 8kN acts 15m from the left support. Calculate the horizontal thrust, maximum bending moment at 15m from the left support. 10M

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- Q.6(A) A symmetrical three hinged parabolic arch of span 40m and rise 8m carries a u.d.l. of 30 kN/m over the left half of span. The hinges are provided at supports and centre of the arch. Calculate the bending moment, radial shear and normal thrust at a distance of 10m from left support 10M

OR

- Q.6(B) The cable supports a girder which weighs 12kN/m. Determine the tension in the cable at points A, B & C. 10M



*** END***

