Code No.: **50H03**

MR15 - 2015-16 Batch

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, DECEMBER -2018

Subject **Technical Communication and Presentation Skills**

Branch: **Common to CE, ME And Mining**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. How does technical vocabulary help in strengthening language skills?
2. Write a brief note on the use of 'impersonal language' in technical writing.
3. What are the elements of a Technical report?
4. Discuss the role of humour in giving presentations.
5. Mention any two ways to improve reading speed.

PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. a) List out the phonemic consonants with examples (5M)
   b) Write the phonemic vowels in the following words
   i) Culture ii) Later (2M)
   c) How do you differentiate between technical and general vocabulary. (3M)
2. a) What are anagrams? Explain with examples.
   b) Write short notes on Diphthongs.
3. a) Imagine that you are the director of your company. Write a circular to your share holders about change of address of your registered office.
   b) You are the manager of the marketing department in your company. A new assistant manager has recently been appointed and will start work soon. Write a memo to the administrative officer using the following hints: the need for the appointment – when the assistant manager will join the company – the qualifications and experience of the assistant manager
4. a) Explain quantitative and mixed method of writing.
   b) Write short notes on Qualitative Method of writing.
5. Imagine that you are an Assistant Executive Engineer working on the Hyderabad Metro Rail (MRTS) project. Write a Progress report to the Managing Director of L & T Metro Rail Hyderabad Limited giving the details of the project. You may use the following hints:
   Status of work done in the 3 Corridors i.e. Miyapur to L.B. Nagar, JBS to Falaknuma and Nagole to Raidurg respectively – estimated budget - time of completion of the project – recommendations
6. a) Write a report to the Director General of Police (DGP) of Telangana State Police Department informing the regular incidents of eve teasing in your locality and requesting the delegation of She tcams. (5M)
   b) Write a report to the chairman of Telangana State Pollution Control Board about the necessity of controlling polythene waste in your locality.
7. a) Write the types of presentations.
   b) Suggest the various ways to overcome the barriers of effective oral presentation.
8. a) Write a note on reading skill. [4M]
   b) What do you understand from the phrase "Reading for specific purpose" explain. [6M]

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: **Disaster Management**

Branch: **CE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. What are Planetary and extra planetary hazards? Give one example each
2. Define Volcano and write the process involved in volcanic eruption.
3. Write about dilatency model for earth quake prediction.
4. Role of GIS in disaster monitoring
5. Write the significance of coastal ecosystem.

PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. What is Disaster Management? Write an account on different approaches to disaster management. [10M]
2. When does the hazard become a disaster? Explain with example. [10M]
3. a) Give a brief account on Landslides [5M]
   b) Give a brief account on Biological hazards [5M]
4. a) Write short notes on Role of Seismology in earthquake prediction [5M]
   b) Write short notes on Avalanches- causes and impacts [5M]
5. Explain in detail various stages of Disaster management. [10M]
6. a) Write short notes on Role of meteorology in cyclone prediction [5M]
   b) Write short notes on Risk analysis and assessments. [5M]
7. Explain the role of IMD in Disaster Management. (10M)
8. Explain various disasters occurring in the Himalayan regions of India. [10M]

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: **TRANSPORTATION ENGINEERING**

Branch: **CE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. What are the four basic requirements of an ideal alignment.
2. What are the obligatory points? List the factors affecting alignment.
3. Explain condition and collision diagrams with neat sketches.
4. List out the principles of channelization.
5. Define sleeper density.

PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. Explain the modified classification of road system in India as per the Third Twenty Year Road Development Plan.
2. a) Explain the salient features of Bombay road plan.
   b) Explain the classification of roads based on weather and surface.
3. a) Define overtaking sight distance. (2)
   b) While aligning a highway in a built up area, it was necessary to provide a horizontal circular curve of radius 446 m. The design speed is 85 Kmph, the length of wheel base is 8m and the pavement width is 12m. Design the superelevation and extra widening. (8)
4. a) A NH passing through a flat terrain has a horizontal curve of radius equal to the ruling minimum radius. Design all the geometric features of this curve, assuming suitable data.
   b) A highway of width 7.5 m radius 150 m with a speed of 120 kmph and the length of the wheel base 7.0 m. Find the extra widening required.
5. a) Explain in detail the road user and vehicular characteristics that may influence the performance of traffic.
   b) Write a short note on origin-destination studies.
6. a) What are the causes of road accidents? How is accident study carried out? What are the measures that can be applied for reduction of accidents?
   b) Present a typical architecture of intelligent transport system applied to public transport
7. Give a neat sketch of a rotary intersection and indicate various components. Also give the design standards for each component.
8. a) Explain different types of gradients in railways. (2)
   b) The length of a runway under standard conditions is 2100 m. The airport is to be provided at an elevation of 500 m above mean sea level. The airport reference temperature is 20°C. The construction plan provides gradients of +1.00 %,-0.5%, +0.5%, +0.4 % and -0.1% at chainages 300, 800, 1200, 1600 and 2000 to 2500 m from one end. Determine the actual length of runway to be provided based on ICAO recommendation. (8)

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: **Design of Steel Structures**

Branch: **CE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

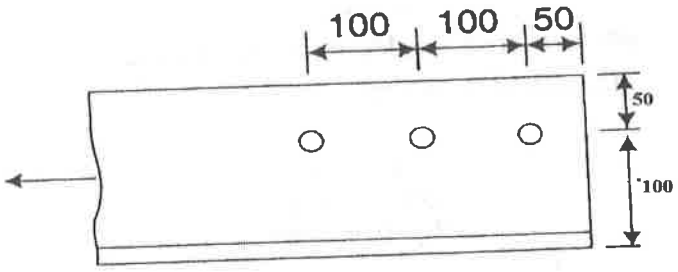
1. What are the load combinations considered in plastic design?
2. List the connections that can be used for resisting moment.
3. Write the three different types of failures in tension members.
4. What are the different types of stiffeners provided in a plate girder?
5. Draw the figures of HOWE TRUSS and NORTH LIGHT ROOF TRUSS.

PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. a) List out the differences between working stress method and limit state method of design of steel structures. [5M]
   b) Explain the importance of plastic design of steel structures. [5M]
2. a) List various steps involved in the construction of steel structures. [5M]
   b) Discuss about Limit state of serviceability. [5M]
3. Design a stiffened seat connection to join ISMB 350@ 514 N/m with a column section ISMB 300@576.8 N/m. The beam transmits an end reaction of 320 kN due to factored loads. Steel is of grade Fe 410. [10M]
4. a) Mention the bolt terminology with a neat sketch. [3M[
   b) A beam ISWB 550 having equal flange width to that of column, transfers a factored end reaction of 275 KN to the flange of the column ISSC 250. Design the stiffened seat angle connection using 20 mm bolts of grade 4.6, fy =250 MPa. [7 M]
5. Design a built-up column 7m long to carry factored axial load of 1000 kN. The column is restrained in position but not in direction at both the ends. Design the column with two channels placed toe-to-toe. Provide single lacing system with site welded connection. Assume steel of grade Fe 410 and bolts of grade 4.6. [10M]

6. The 150 X 75 X 10 mm angle shown in Fig. is connected with three 20- mm bolts. Determine its block shear strength. Compare the result with the tensile strength in net section rupture of the member. [10M]



7. A compound beam is to carry a uniformly distributed dead load of 300kN and an imposed load of 500kN. The beam is simply supported over a span of 12meters. Allow 30kN for the weight of the beam. The overall depth should not exceed 700mm. The bearing plate width is 300mm and full lateral support is provided for Compression flange. [10M]

8. Determine the design loads on the purlins of an industrial building near Vishakhapatnam, given : [10M]

Class of the building : general with life of 50 years

Terrain : category 2

Maximum dimension : 40 mm

Width of the building : 15 m

Height at each level : 8 m

Permeability : medium

Span of truss : 15 m

Pitch : 1/5

Sheeting : AC sheets

Spacing of purlins : 1·35 m

Spacing of trusses : 4 m

Assume data wherever required.

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: **Rehabilitation and Retrofitting of Structures**

Branch: **CE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. What is renovation and remodeling?
2. How will you repair the fire damaged elements?
3. Give a note on inspection of structure.
4. What is blanketing?
5. What is jacketing?

.PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. a) What are structural and non-structural cracks [5M]
   b) What is dry packing and external stressing? [5M]
2. a) What are the causes for moisture effects, fire and natural disasters? [5M]
   b) What are the preventive measures for weathering action and overloading? [5M]
3. a) Explain effects of chlorides in reinforcement corrosion [5M]
   b) Discuss regarding fire induced structural damage [5M]
4. a) Write about the damage of structures due to fire [5M]
   b) What are the parameters responsible for the degree of structural damage? [5M]
5. a) What are symptoms and diagnosis of distress? [5M]
   b) Explain about NDT? [5M]
6. a) What are the objectives of conditional assessment? [5M]
   b) What are the testing for mechanical properties ? [5M]
7. A Steel column is in deteriorated state which holds the truss of the roof. State the possible reasons for deterioration& solutions for the same. [10M]
8. a) What is the need for continuous monitoring of structures? [5M]
   b) What are the components of structural health monitoring system? [5M]

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MR15 - 2015-16 Batch

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III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: **Water Resources Engineering**

Branch: **CE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. What are the assumptions of UHG theory?
2. Explain aquifer parameters.
3. What are the ill effects of Irrigation?
4. Determine the average particle size of the silt suspended in Upper Bari Doab Canal system using Lacey's regime theory.
5. Define secondary yield and average yield.

PART-B

Answer any FIVE Questions of the following **5x 10 Marks= 50Marks**

1. a) Describe about Evapo-transpiration.
   b) Explain the method of determining direct run off from a given storm hydrograph.
2. Answer any **Two** of the following
   (a) Discuss about Øindex and ω index
   (b) What are the different methods used to separate base flow from a hydrograph? Explain any one method.
   (c) Methods of estimating average depth of rainfall over a catchment
3. (a) In a water table aquifer of 50 m thickness, a 20 cm diameter well is pumped at a uniform rate of 0.05 m^3/s. If the steady state drawdown measured in the observation wells located at 10 m and 100 m distances from the well are 6.5 m and 0.25 m respectively, determine the hydraulic conductivity of the aquifer. [7M]
   (b) Define the following terms: [3M]
      i. Hydraulic conductivity
      ii. Intrinsic permeability
      iii. Aquifuse
4. (a) List the assumptions made in the analysis of steady radial flow into a well. (4M)
   (b) In an artesian aquifer of 8 m thick, a 10 cm dia well is pumped at a constant rate of 100 lit / minute. The steady state drawdown observed in two wells located at 10 m and 50 m distance from the center of well are 3 m and 0.05 m respectively. Compute the transmissivity and hydraulic conductivity of the aquifer. (6M)

5. a) List the methods of application of irrigation water and describe sprinkler method of irrigation
   b) Write a note on methods of improving soil fertility [6M +4M]

6. a) Describe the necessity for crop rotation technique to improve soil fertility .
   b) Explain sprinkler method of irrigation and list the advantages and disadvantages.

7. (a) Design an irrigation channel with m = 1, N = 0.0225, and B/D = 4.40 by Kennedy's theory to carry a discharge of 5 cumecs.
   (b) Explain the Classification of the canals based on purpose and alignment.

8. (a) Explain, how do you determine the reservoir capacity (4M+6M)
   (b) The following information is available regarding the relationship between trap efficiency and capacity – inflow ratio for a reservoir. Find the possible life of the reservoir with an initial reservoir capacity of 25 Million Cubic meters (MCM), if the annual flood inflow is 50 MCM and average annual sediment inflow is 350 kilotonnes. Assume specific weight of sediment as 1400 kg/m3.

Capacity / inflow ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Trap efficiency (%)	87	93	95	95.5	96	96.5	97	97.2	97.3	97.5