Code No.: **40129**

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 I SEMESTER SUPPLEMENTARY EXAMINATIONS, APRIL-2019

Subject: **Water Resources Engineering-II**

Branch: **CE**

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

PART – A

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

1. Define Dead Storage.
2. Write the formula for limiting height of gravity dam.
3. What is the use of spillway?
4. Define sensitivity.
5. Define Launching apron.

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. Explain Mass inflow curve.
2. Describe in brief various investigations required for reservoir planning.
3. What are the forces acting on a gravity dam?
4. Draw the elementary profile of a gravity dam.
5. What are the different causes for the failure of earth dams?
6. Draw the diagram of Ogee Spillway.
7. What do you understand by canal fall and where it is located?
8. Differentiate between silt ejector and silt excluder.
9. Explain the level crossing.
10. What is the significance of estimation of exit gradient?

PART-B

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

1. (a) Explain various types of reservoirs. What do you understand by a multipurpose reservoir?
   (b) Describe in brief various investigations required for reservoir planning.

OR

2. (a) What is sedimentation in a reservoir?
   (b) Find the probable life of reservoir with an initial capacity of 3700 ha-m if the average Annual inflow is 7400 ha-m and the average annual sediment inflow is 2 x 10^6 kN. Assume a specific weight of sediment as11.2 kN/m^3. The useful life of the reservoir will terminate when 80% of its initial capacity is filled with sediment. The values of trap efficiency for different values of capacity-inflow ratios are as follows.

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	97.3	97.4	97.5

3. (a) Write the detailed procedure for stability of gravity dam by analytical method. (04)

(b) Calculate compressive stress and principal stress at the toe and heel of a dam if the gravity dam is 10 m high, its top width is 1 m and base width is 9 m. Assume weight of concrete 2400 kg/m^3 and water is stored upto the top of the dam and density of water is 1000 kg/m^3. (06)

OR

4. (a) Enumerate various forces acting on a gravity dam. Give the expression for each of them. (07)

(b) For the preliminary design of concrete gravity dam calculate the effect of earthquake with the following data.

i. Dam is to be triangular in section.
ii. Base width is 40 m.
iii. Height of the dam is 60 m.
iv. Horizontal earthquake acceleration of the foundation 0.1g.
v. Specific gravity of material 2.4. (03)

5. (a) What are the various types of earthdams according to the section of the dam?

(b) Discuss various causes of failures of earth dams. How would you prevent different types of failures?

OR

6. (a) What is phreatic line? What is its use and how would you locate a phreatic line in earthdam with a horizontal drainage filter.

(b)Differentiate between tail water rating curve and jump height curve. How would you select the most suitable type of energy dissipating device for different relative positions of the two curves.

7. (a) Draw the layout of diversion head work and describe each part of it. (04)

(b) Write the design procedure of Sarada type fall. (06)

OR

8. (a) What are the different types of falls existing and where do you locate it in a canal run.

(b) Design in detail about cross regulator.

9. (a) What is Bligh's Creep theory? How it is used to design the hydraulic structures on a permeable foundation?

(b) For a maximum seepage head of 6.0 m, the depth of d/s cutoff as 10.3 m and total floor length of 57.0 m, calculate the exit gradient using Khosala's method.

OR

10. Distinguish between (i) Aqueduct and syphon –aqueduct (ii) Level Crossing and an Inlet with neat diagrams.

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MR13 & MR14

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, APRIL 2019

Subject: **Estimating & Costing**

Branch: **CE**

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

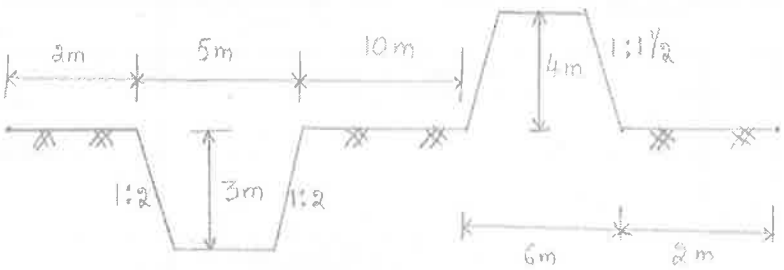
PART – A

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

1. What is an Estimate?
2. State the methods of building estimate.
3. List the different methods available for calculation of volumes.
4. Define overhead charges.
5. What is a contract?

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. Give the units of measurement for the following items.
   a. Filling the basement with sand.
   b. D.P.C. specified width and thickness.
   c. Rough stone pitching.
   d .Shuttering.
2. Mention the types of estimate.
3. If the number of risers = 10, find the number of threads.
4. Write a short note on centre line method.
5. What is lead and lift?
6. Calculate the lead and lift from the given fig.



7. Define rate analysis and S.S.R.
8. What is lead statement?
9. What is meant by
   a. Lumpsum contract.
   b. Schedule prices contract.
10. What is the purpose of valuation?

PART-B

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

1.Describe the methods of preparation of approximate estimate.

(OR)

2.a. Explain the factors to be considered while preparing detailed estimate. (5M)

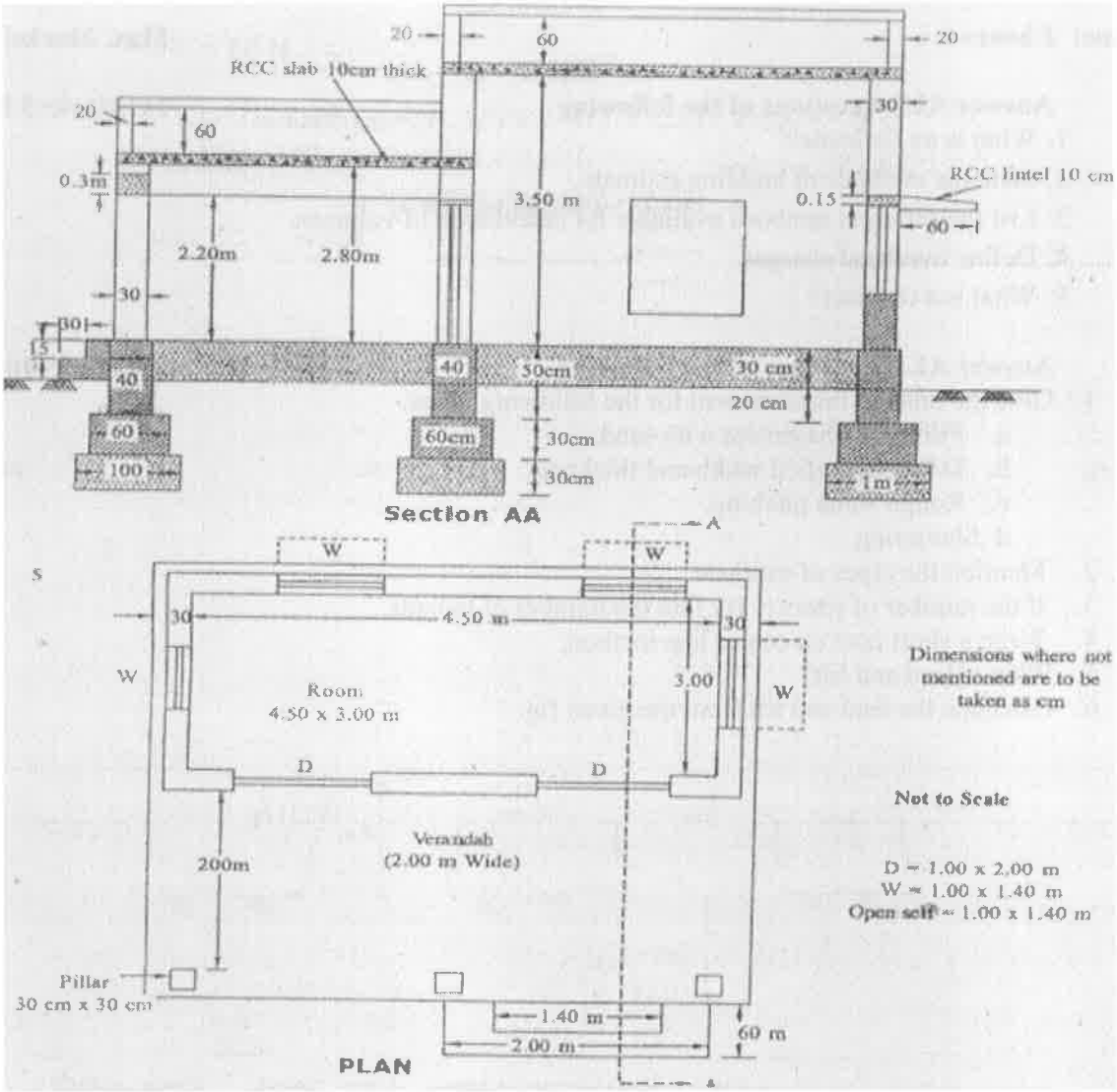
b. List the rules for measurement of each item. **(5M)**

3.Explain the difference between long wall-short wall method and center line method.

(OR)

4.Prepare detailed estimate for the following quantities for a building shown in Fig. by using Long wall and Short Wall Method. (4+3+3)M

a) Earth work excavation in foundation.
b) 1st class Brick work in 1:6 Lime Concrete in foundation.
c) 1st class Brick work in 1:4 Cement Mortar in Super Structure.

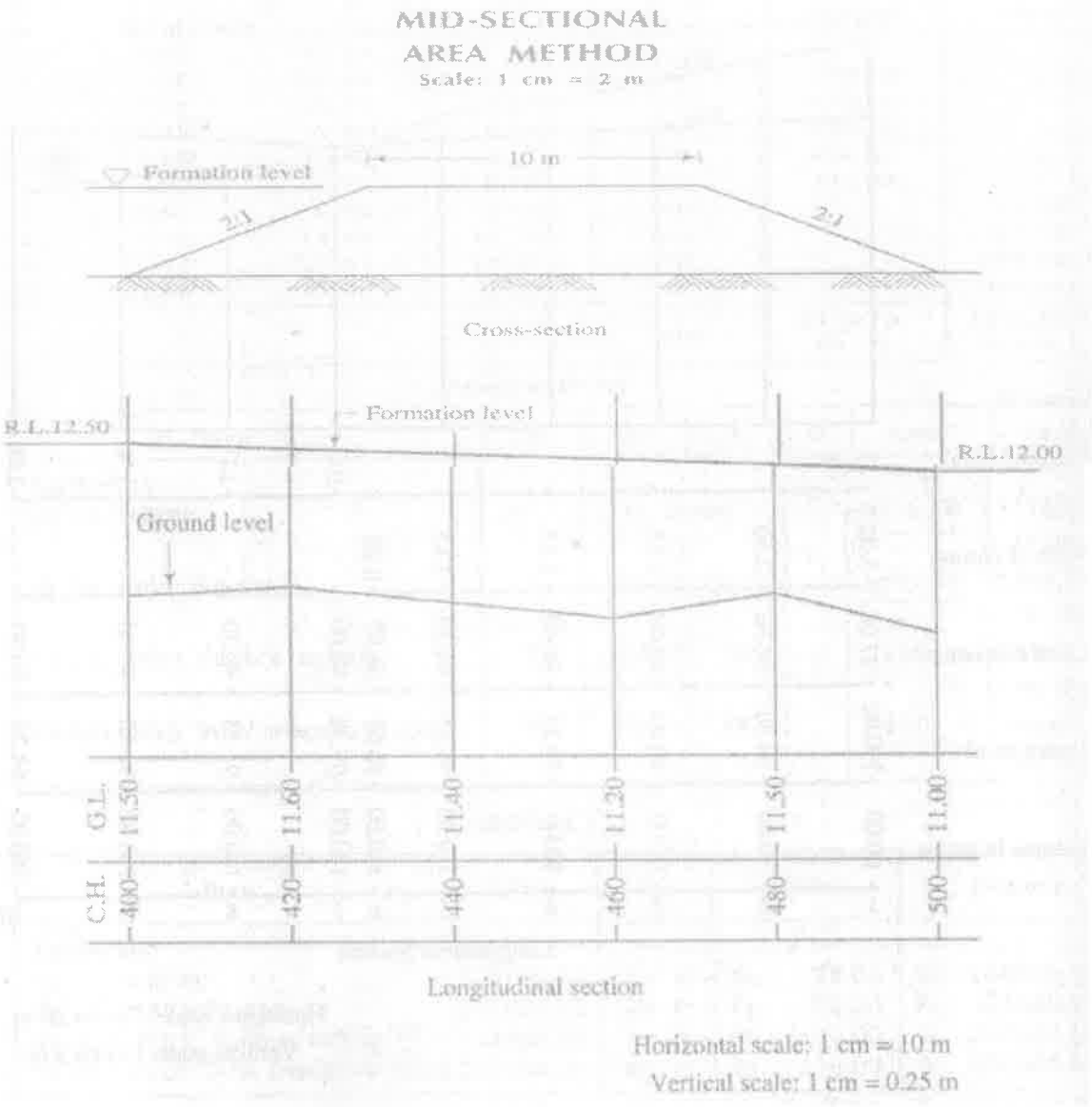


5. Reduced level (R.L) of ground along the centre line of a proposed road from chainage 10 to chainage 20 are given below .The formation level at the 10th chainage is 107 and the road is in downward gradient of 1 in 150 up to the chainage 14 and then the gradient changes to 1 in 100 downward . formation width of road is 10 metre and side slopes for banking are 2:1 (horizontal : vertical) and for cutting 1:2(H:V) .Length of the chain is 30 metre.

Chainage	10	11	12	13	14	15	16	17	18	19	20
R.L. of ground	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.3

(OR)

6. Calculate the volume of earth work for a proposed road having formation width 10m and side slope 2:1 using mid sectional area method. The cross section and longitudinal section of a road is shown below in Fig.



7. Prepare analysis of rates for plastering (1:3) and becomes 1.5 cubic meters.
   The following rates may be adopted
   a) Cement Rs 175/- per 50kg
   b) sand Rs40/- per cum
   c) Mason Rs 50 /- per day
   d) male mazdoor Rs 80/- per day
   e) Female mazdoor Rs 35/- per day
   f) L.S sundries

(OR)

8. a. Analyse the rate for 12mm plastering 1:3 cement mortar for a wall building.
   b. Explain briefly the various factors affecting the rate analysis.
9. Explain in detail the conditions of contract.

(Or)

10. Explain different methods of valuation.