H.T No: | | | | | | | | | | | R22

CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

Examination : **B.Tech VII Semester Regular Examinations Nov/Dec-2025**
Course Name : **Quantity Survey & Valuation**
Course Code : **A401319**
Branch : **Civil Engineering**
Date & Session : **26-11-2025 AN** **Duration: 3 hours** **Max. Marks: 60**

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions

Each question carries ONE mark. **10x1=10M**

1. State the methods of preparing approximate estimates. 1 M
2. Write any two purposes of Estimating. 1 M
3. How you consider a particular wall as a long wall or a short wall? 1 M
4. Differentiate between Revised & Supplementary Estimate. 1 M
5. State any two advantages of preparing a bar bending schedule. 1 M
6. Differentiate between development length and lap length. 1 M
7. What is the difference between direct cost and indirect cost in rate analysis? 1 M
8. What are the factors on which the rate of particular item depends on? 1 M
9. What are the purposes of valuation? 1 M
10. Define Contract. 1 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Briefly explain the different types of estimates discussing when each one is preferred. 10M

OR

11. B). "Estimating the ultimate cost of a project requires the integration of many variables" discuss the statement with real example and brief on standard specifications for different items of building construction. 10M

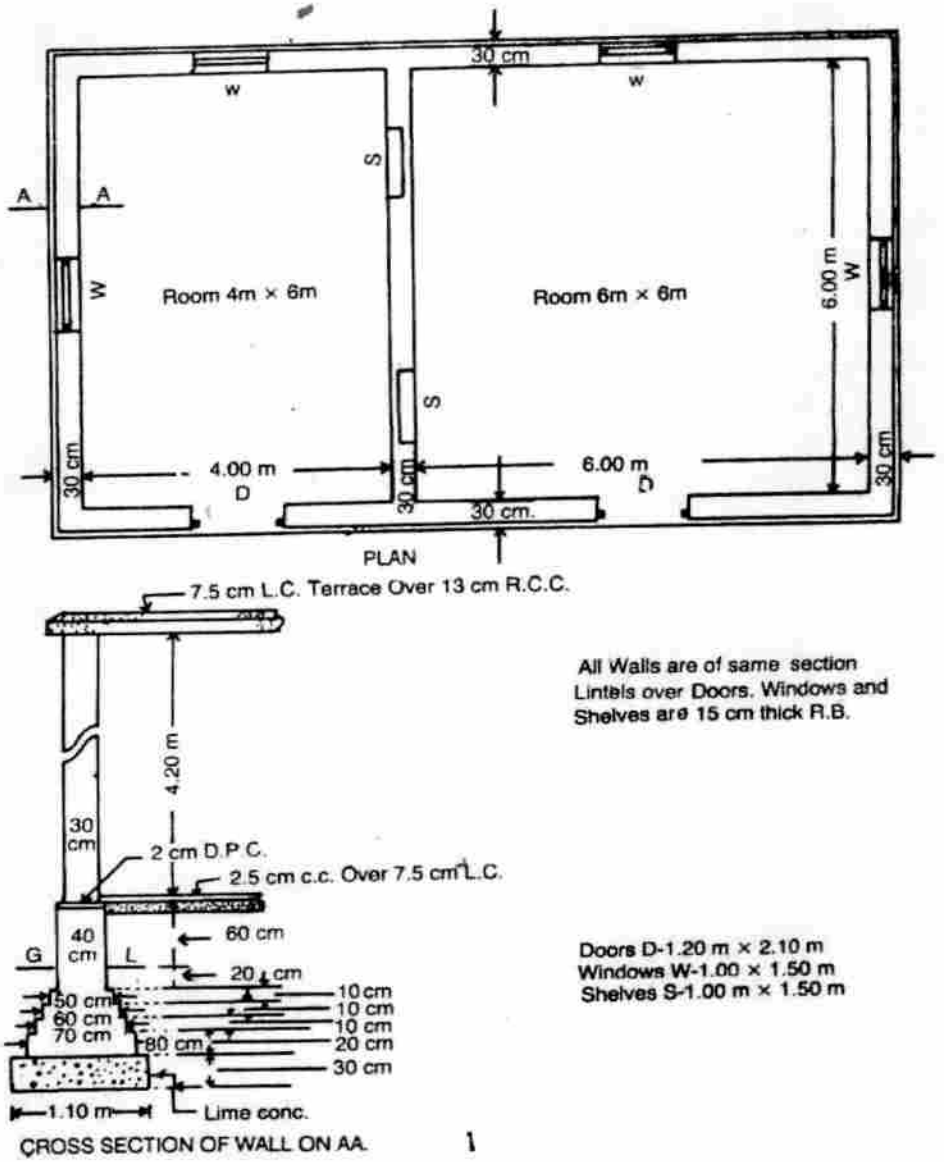
12. A). Prepare the detailed estimate for the following items of work for the building shown in figure. 10M
i) Brickwork in CM (1:6) in foundation footing;
ii) R.C.C. (1:1.5:3) in columns upto ground level only;
iii) 12mm thick plastering the wall surfaces with CM (1:6) for all super structure walls by central line method;
iv) R.C.C. (1:2:4) in plinth Beams;
v) R.C.C. (1:2:4) in slab.

OR

12. B). Calculate below quantities in fig. 10M
i) Estimate the earth work exaction
ii) Quantity of the PCC (1:4:8) per flouring.
iii) Calculate the brick work of the super structure.
iv) Calculate the concrete for roofs slab. (100mm thick)

(P.T.O..)

TWO ROOMED BUILDING



CROSS SECTION OF WALL ON AA

13. A). The formation width of a road embankment is 9.0m. The side slopes are 2.5:1. The depths along the center line of road at 50.0m intervals are 1.2,1.1,1.4,1.2,0.9,1.5 and1.0 m. It is required to calculate the quantity of earthwork by prismoidal rule. 10M

OR

13. B). What do you understand about the bar bending and what factors plays major role in case of bar bending. 10M

14. A). What do you understand by rate analysis? What are the factors affecting analysis of rates of civil works? And explain the elements which constitute the rate analysis? 10M

OR

14. B). Prepare a rate analysis for the following items 10M
i) R.C.C work in columns with proportion 1:2:4 – unit cu.m.
ii) Brick work in foundation and superstructure with 1:6 - unit cu m.

15. A). Discuss the importance of contract documents in civil engineering works, general conditions of contract and brief on the procedure of valuation of buildings. 10M

OR

15. B). Enumerate the different methods of valuation of a building. How is the fixation of rent for a building done? 10M

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H.T No: | | | | | | | | | | | R22

CMR COLLEGE OF ENGINEERING & TECHNOLOGY
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Examination : **B.Tech VII Semester Regular Examinations Nov/Dec-2025**
Course Name : **Ground Improvement Techniques**
Course Code : **A401407**
Branch : **Civil Engineering**
Date & Session : **28-11-2025 AN** **Duration: 3 hours** **Max. Marks: 60**

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions

Each question carries ONE mark. **10x1=10M**

1.	Define ground modification.	1 M
2.	Identify different soil types.	1 M
3.	Analyze the importance of blasting technique.	1 M
4.	Define mechanical modification.	1 M
5.	Compare the terms filter and drainage.	1 M
6.	Explain the objectives of hydraulic modification.	1 M
7.	What is meant by chemical grouting?	1 M
8.	What are the various grout material?	1 M
9.	Define soil nailing.	1 M
10.	Discuss about soil reinforcement.	1 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A).	i) Explain how do you say a soil is required to be modified.	5M
	ii) Analyze the laboratory tests to characterize problematic soils.	5M
	OR	
11. B).	i) Explain briefly the objectives of ground modification.	5M
	ii) Organize the various electrical methods of densifying cohesive soils.	5M
12. A).	i) How can you densify cohesion less soil with the help of vibro-compaction technique?	5M
	ii) Explain how soil is improved by the blasting method.	5M
	OR	
12. B).	Analyze how soil is improved by the method of compaction piles by using sand piles.	10M
13. A).	i) Explain the various techniques in hydraulic modification.	5M
	ii) Explain the applications of geo-synthetics in seepage control.	5M
	OR	
13. B).	i) Explain single stage dewatering system with a neat sketch.	5M
	ii) Discuss the Electro-Osmosis technique of dewatering.	5M

(P.T.O..)

14. A). i) Analyze lime grouting and cement grouting techniques in detail. 5M
ii) Classify and explain various methods of chemical modification. 5M

OR

14. B). i) Explain about the Jet grouting technique in ground modification. 7M
ii) Analyze the equipment used in grouting techniques in soil improvement. 3M

15. A). i) Analyze the practical relevance of (a) Ground anchors and (b) Rock bolting. 5M
ii) Discuss the effectiveness of reinforcement with strip and geogrid reinforced soils. 5M

OR

15. B). i) Explain soil nailing technique with a neat sketch. 5M
ii) Explain the importance of Soil reinforcement by inclusions and confinement. 5M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
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Examination : **B.Tech VII Semester Regular Examinations Nov/Dec-2025**
Course Name : **Design of Hydraulic Structures**
Course Code : **A401410**
Branch : **Civil Engineering**
Date & Session : **01-12-2025 AN** **Duration: 3 hours** **Max. Marks: 60**

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions

Each question carries ONE mark. **10x1=10M**

1. What is reservoir yield? 1 M
2. Show various storages in reservoir in a neat diagram. 1 M
3. State any three basic design requirements of a gravity dam 1 M
4. Enumerate the Forces acting on a gravity dam. 1 M
5. Define the term 'piping' in earthen dam. 1 M
6. What Significance of Jump Height Curve? 1 M
7. What is the difference between weir and barrage? 1 M
8. Write the main functions of Upstream and Downstream sheet pile. 1 M
9. Illustrate the functions of canal regulator. 1 M
10. What is the purpose of providing canal falls? 1 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). The yield of runoff in Mm^3 from a catchment area during each successive month is given in the below table: 10M

1	2	3	4	5	6	7	8	9	10	11	12
1.4	2.1	2.8	8.4	11.9	11.9	7.7	2.8	2.52	2.24	1.96	1.68

Determine the minimum capacity of reservoir required to allow the above volume of runoff to be drawn off at a uniform rate assuming that there is no loss of water over spillway.

OR

11. B). What do you understand by mass curve? Explain the method for determining safe yield from a reservoir of given capacity using mass curves. 10M

12. A). A dam 6 m high and 1.5 m wide at the top has vertical water face. Find the base width of the dam if no tension is to develop. Take unit weight of the masonry as 20 kN/m^3 and c = 1. Investigate the stability of the above dam if the coefficient of friction is 0.6 and maximum allowable compression stress is $1800kN/m^2$. 10M

OR

12. B). Explain briefly with neat sketch the different forces that may act on a gravity dam. Indicate their magnitudes, directions and locations. 10M

(P.T.O..)

13. A). Discuss with neat sketch how top seepage line is drawn in a homogeneous dam without any arrangement for drainage. 10M

OR

13. B). A round crested spillway passes a design discharge of $1m^3$ /sec per meter length. The coefficient of discharge may be taken as $C_d = 0.7$. If the height of the crest above the downstream stilling basin floor level is 10 m, design the i) depth and ii) length of the stilling basin. Depth of the flow on the downstream of the spillway is 1m at the design discharge of $1m^3$ /sec. Enquire if the bed of stilling basin has to be depressed. 10M

14. A). Describe the Bligh's creep theory and Khosla's theory mentioning advantages and modifications over each other 10M

OR

14. B). Explain different components of diversion head works with neat sketches. 10M

15. A). Design a 1.5 meters Sarda type fall for a canal having a discharge of 12 cumecs, with the following data: 10M

Bed level upstream = 103.0 m
Side slopes of channel = 1:1 m
Bed level downstream = 101.5 m
Full supply level upstream = 104.5 m
Bed width u/s and d/s = 1.0 m
Soil = Good Loam
Assume Bligh's coefficient = 6.

OR

15. B). What are the different types of cross drainage works that are necessary on a canal alignment? State briefly the conditions under which each one is used. 10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
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Examination : **B.Tech VII Semester Regular Examinations Nov/Dec-2025**
Course Name : **Solid Waste Management**
Course Code : **A401413**
Branch : **Civil Engineering**
Date & Session : **03-12-2025 AN** **Duration: 3 hours** **Max. Marks: 60**

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions

Each question carries ONE mark. **10x1=10M**

1.	List out the element of solid waste.	1 M
2.	Define the sampling of solid waste.	1 M
3.	List out the processing techniques of solid waste.	1 M
4.	State collection of solid waste.	1 M
5.	Define composting.	1 M
6.	State pyrolysis.	1 M
7.	List out the types of liners of landfills.	1 M
8.	Define the term leachate.	1 M
9.	Define biomedical waste.	1 M
10.	State industrial waste management.	1 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A).	Illustrate the types of solid waste with examples.	10M
	OR	
11. B).	Summarize the solid waste management rules 2016.	10M
12. A).	Describe the stationary container system for solid waste collection.	10M
	OR	
12. B).	Describe the importance of route planning for solid waste collection system.	10M
13. A).	Explain the various parameters for composting and brief about problems with composting.	10M
	OR	
13. B).	Summarize the recovery energy from waste with neat example.	10M
14. A).	Describe the importance of landfills and its challenges with neat example.	10M
	OR	
14. B).	Illustrate the leachate pollution and its impacts on environment.	10M
15. A).	Describe the impact of hazardous waste on human health and environment.	10M
	OR	
15. B).	Describe the methods of risk assessment due to hazardous waste disposal.	10M

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