31044 – Estimating and Costing I

UNIT 1

PART – A&B (2&3 MARK)

1. Define Estimate?
2. What is the necessity of estimate?
3. List the types of estimate?
4. Define taking off quantities?
5. Define trade and group system?
6. What is measurement book?
7. What do you understand by painting coefficient?
8. List the categories of labourers?
9. Find out the material requirement for CM 1:4?
10. Find out the material requirement for Cement concrete 1:2:4-1m^3 using 20mm aggregate?
11. What is meant by standard data book and task?
12. What is the difference between schedule of rate, revision of rate and market rate ?
13. Define lead and lead statement?
14. Explain about lump sum?
15. Define abstract estimate?
16. Define approximate estimate and list the types of approximate estimate?
17. How plinth area is calculated in building?
18. State the units for cement, sand and brick?

PART – C (10 MARK)

1. State the different types of estimate? Describe briefly.
2. Explain the necessity and importance of estimation.
3. Explain in detail the duties and requirements of quantity surveyor.
4. Explain about group and trade system?
5. Find out the calculation for (i)CC 1:5:10-1m^3 using 20mm aggregate (ii)Plastering with CM 1:3 12mm thick – 10m^2
6. Calculate the material required for BW with CM 1:4 and the size of brick is 19x9x9cm.
7. The actual cost of single storey residential building of plinth area 85m^2 is found to be Rs.4,67,500 in which 70% is towards cost of materials and 30% towards the labour. It is proposed construct a similar building of same specification with a plinth area of 125m^2 at a place where the cost of materials to be 15% more and cost of labour 20% less. Estimate the rough cost of proposed building.
8. The plinth area of a proposed sloped roof building is 82m^2. The height of main walls above floor level is to be 3m and rise of roof above the wall 1.2m. The cube rate for a similar building is arrived at Rs.615/m^2. Find out the approximate cost of building.

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UNIT 2

PART – A&B (2&3 MARK)

1. What is meant by regular and irregular section?
2. What are the rules followed to calculate the area of irregular figures?
3. Define trapezoidal and prismoidal rule?
4. Define level section and two level section with neat sketch?
5. Write the formula for volume of prism and wedge?
6. What are the rules followed to calculate the volume of irregular solids?
7. Derive the computation of area of level section?
8. The following offsets were taken from 20m interval from a survey line to an irregular boundary line of 4.50, 4.30, 6.50, 5.50, 7.50.Calculate the area by Simpsons rule?

PART – C (10 MARK)

1. A chain line was run in the middle of a long strip and perpendicular offsets were taken the boundaries on the left and right side of the chain line. The measured values are given below. Determine the area of the strip of land. Use i) Trapezoidal rule ii) Prismoidal rule.

Chainage (m)	0	15	30	45	60	75	90	105	120
Offset to right(m)	10.1	9.6	6.2	12.2	13.1	11.2	10.3	11.2	9.8
Offset to left(m)	12.8	9.4	8.8	10.8	9.6	12.2	10.1	10.8	12.1

2. Write the formulas for computation area of irregular solids using all rules with neat sketches?
3. Write the formulas for computation volume of irregular solids using all rules with neat sketches?
4. A cutting is to be made for the formation of a railway track with side slopes of 1:5 and formation width of 10m. The ground is having a traverse slope of 1 in 10(10:1). The depth of cutting along the centre line of formation will be 1.5m, 2.4m, and 1.2m at three consecutive sections spaced at 30m apart. Calculate the volume of earth work in cutting in this 60m length using prismoidal formula.
5. The perpendicular offsets from the straight boundary of an agricultural land to its opposite irregular boundary are measured values given below

Chainage (m)	0	20	40	60	80	100	120	140	160
Offset (m)	40	40	52	64	50	53	49	40	40

This land to be divided into two halves of equal areas by a perpendicular offset from the straight boundary. Calculate the chainage and length of the offset and the area of each half

6. The cross sectional areas of an embankment are as given below. Calculate the volume of the embankment by (i) Trapezoidal rule (ii) Prismoidal rule.

Chainage(m)	0	50	100	150	200
Area in m^2	200	540	810	1420	1520

7. An embankment of width 10m and side slopes 1.5:1is required to be made on a ground which is level in a direction transverse to the centre line. The central heights at 40m intervals are as follows 0.90, 1.25, 2.15, 2.50, 1.85, 1.35, 0.85. Calculate the volume of earthwork by (i) Trapezoidal rule (ii) Prismoidal rule.

8. The height of an embankment of formation width 10m with side slopes 1:5:1 are found to be 3m, 4m, 5m at 0m, 30m and 60m length by prismoidal formula. Assuming the ground level is in transverse direction.

UNIT 3

PART – A&B (2&3 MARKS)

1. Define data?
2. What is sub data and main data ?
3. What is lead statement?
4. What is standard data book?
5. What are the points to be considered while preparing data?
6. Prepare the sub data for CM 1:3 – 1m^3.
    The cost of cement - Rs.4000/t
        Sand   - Rs. 300/m^3
        Mixing charge - Rs.70/m^3
7. Define observed data. Give example?
8. When will you provide lump sum provision in abstract estimate?

PART – C (10 MARKS)

1. Preparing the data and analysis of rate for Brickwork in superstructure in CM 1:4 – 1m^3
2. Preparing the data and analysis of rate for Random rubble masonry in LM 1:2 – 10m^3
3. Preparing the data and analysis of rate for Cement concrete 1:4:8 for floor works – 1m^3
4. Preparing the data and analysis of rate for Flooring with cuddapah slab 25mm thick in CM 1:4 – 10m^2
5. Preparing the data and analysis of rate for Plastering with 12mm thick – 10m^2
6. Preparing the data and analysis of rate for Centering for soffits of RCC slabs including strutting 3m height – 1m^2
7. Preparing the data and analysis of rate for Roofing with GI sheets of thickness 0.8mm
8. Preparing the data and analysis of rate for Painting, priming coat on new iron work – 10m^2
9. Preparing the data and analysis of rate for Pointing with CM 1:4 – 10m^2
10. Preparing the data and analysis of rate for Rough stone dry packing for aprons & Revetments– 1m^3

UNIT 4
PART – A&B (2&3 MARKS)

1. What is meant by taking off quantities?
2. What are the various methods used to take dimension from the drawing?
3. Define abstract estimate?
4. What is meant by detailed estimate?
5. Write about Individual wall method and Centre line method?
6. How to enter the dimension from the detailed drawing in detailed estimate?
7. List the methods used to taking off quantities?
8. What is meant by Trade system?
9. What is difference between Trade and Group system?

PART – C (10 MARKS)

1. Prepare Detailed estimate and Calculate the quantities of all works by Trade system for A small residential building with RCC flat roof.
2. Prepare Detailed estimate and Calculate the quantities of all works by Trade system for A small residential building with RCC sloped roof.
3. Prepare Detailed estimate and Calculate the quantities of all works by Trade system for A Commercial building with RCC flat roof.
4. Prepare Detailed estimate and Calculate the quantities of all works by Trade system for A Community hall with RCC columns and T beams.
5. Prepare Detailed estimate and Calculate the quantities of all works by Trade system for A small Industrial building with AC sheet roof on steel trusses.

UNIT 5
PART – A&B (2&3 MARKS)

1. Define group system?
2. What is dimension paper?
3. Define checking the squaring?
4. Define abstracting?
5. Name the various columns in dimension paper?
6. Define abstract and list the functions of abstract?
7. Write the uses of abstract sheet?
8. Write about cancellation of dimension?
9. Explain spacing of dimension?
10. Write about order of abstract?
11. How to enter the dimensions in detailed estimate form?
12. List the standard methods of measurement?
13. Write the methods of squaring? Explain each method with example

14. What is meant by casting up the dimensions?
15. List the methods of writing the bill?
16. What are the points to be considered while checking the bill?

PART – C (10 MARKS)

1. Prepare Detailed estimate and Calculate the quantities of all works by Group system for A small residential building with RCC flat roof.
2. Prepare Detailed estimate and Calculate the quantities of all works by Group system for A small residential building with RCC sloped roof.
3. Prepare Detailed estimate and Calculate the quantities of all works by Group system for A Commercial building with RCC flat roof.
4. Prepare Detailed estimate and Calculate the quantities of all works by Group system for A Community hall with RCC columns and T beams.
5. Prepare Detailed estimate and Calculate the quantities of all works by Group system for A small Industrial building with AC sheet roof on steel trusses.