Vidhigya Challenger Series
Daily Practice Sheet 13
Quantitative Techniques

Directions (1-5): Read the following information carefully and answer the questions that follow.
A rectangular plot is of length 294 meter and its breadth is 50 meter. A cuboidal tank of 30-meter length, 10-meter width and 12-meter depth is dug inside this rectangular plot. Vidane plans to cover the remaining area i.e. the area left in the rectangular plot after digging the tank with tiles.

1. Find the Volume of the tank.
(a) 14700 m^3 (b) 17280 m^3 (c) 1800 m^3 (d) 3600 m^3

2. Find the area of remaining part of the plot where Vidane plans to do tiling.
(a) 14700 m^2 (b) 14400 m^2 (c) 28800 m^2 (d) 28500 m^2

3. If the soil taken out from the digging the tank is spread uniformly in the remaining part of the plot then, find the increase in the height of the surface of the plot.
(a) 0.50 m (b) 0.25 m (c) 5.0 m (d) 2.5 m

4. If one tile is 20 m long and 10 m wide then, find how many tiles will be required to cover the remaining part of the plot.
(a) 144 (b) 72 (c) 36 (d) 96

5. If one tile is 10 m long and 10 m wide and each tile costs 2.5 rupees then, find the total cost of tiling.
(a) 180 rupees (b) 500 rupees (c) 360 rupees (d) 270 rupees

Answers & Explanations

1. Ans. d
Sol. Volume of tank = 30 ×10×12 = 3600 m^3

2. Ans. b
Sol. Area of the plot = 294×50=14700 m^2
Area of tank = 30 ×10 = 300 m^2
Area of remaining part = 14700 – 300 = 14400 m^2

3. Ans. b
Sol. Soil taken out will be equal to the Volume of tank.
Soil taken out = Volume of tank = 30×10×12 = 3600 --------- (1)
Now,
Soil taken out will spread on remaining part. Hence soil taken out will be equal to Volume of the remaining part.
Soil taken out = (Area of remaining part) ×Height raised ---------- (2)
In question 2 we have found area of remaining part i.e. 14400 ---------- (3)
From (1) (2) and (3)-
3600 = 14400 × Height
Height raised = 0.25 m

4. Ans. b
Sol.
Area of tile = 20 × 10 = 200 m^2
Area of remaining part = Area of tile × Number of tiles
14400 = 200 × number of tiles
Number of tiles = 72

5. Ans. c
Sol.Area of tile = 10 × 10 = 100 m^2
Area of remaining part = Area of tile × Number of tiles
14400 = 100 × Number of tiles
Number of tiles = 144
Each tile costs 2.5 rupees
Total cost of the work = 144 × 2.5 = 360 rupees