C20-C-503

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BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2024
DCE – FIFTH SEMESTER EXAMINATION

QUANTITY SURVEYING—II

Time : 3 Hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions :   (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1.   List the various component parts of dog-legged staircase.

2.   Estimate the quantity of brickwork in CM (1 : 4) for 10 number of steps in staircase room 4·5 m × 2·0 m. Drawing for single flight is shown in Fig. (A), width of steps in each flight is 1 m :
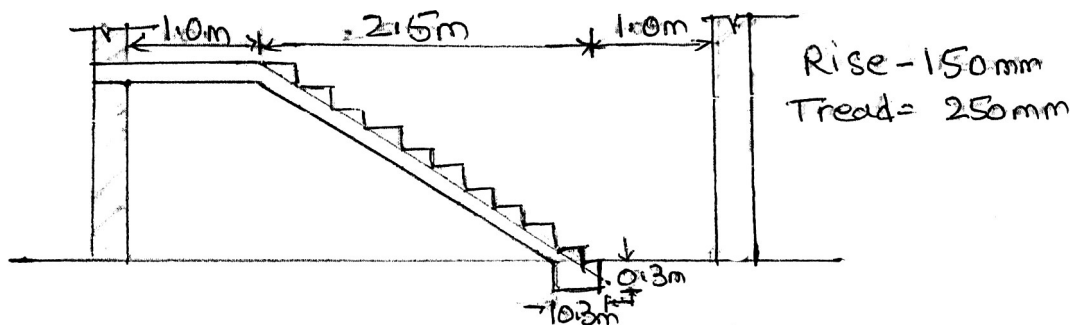

Fig. (A)

3. Calculate the length of a steel rod of 10 mm diameter used in one way slab as given in Fig. (B), given the clear span of slab is 3·2 m, width of supports is 230 mm, thickness of slab is 130 mm and the rod is cranked on one side only. Assume 20 mm cover. Depth of crank is 80 mm.
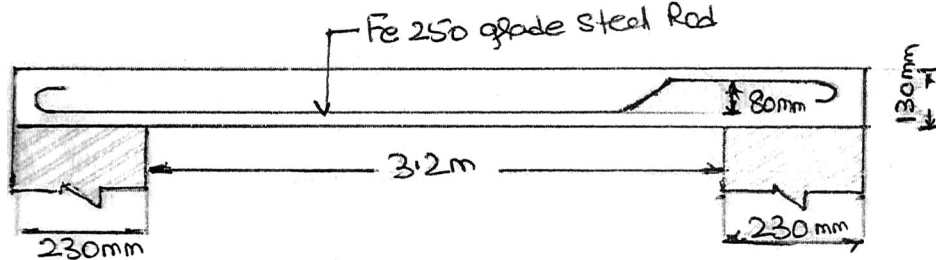

Fig. (B)

4. Write the classification of the roads based on materials used.

5. Prepare the detailed estimate of granular shoulders, on either side of WBM road of 800 m. The width of shoulder is 1 m. The compacted thickness is 100 mm (loose thickness 150 mm).

6. The cross-section of the sluice barrel is shown in Fig. (C). Calculate the quantity of *(i)* RCC in roof slab and *(ii)* Brick masonry in the side walls of the barrel.   1+2
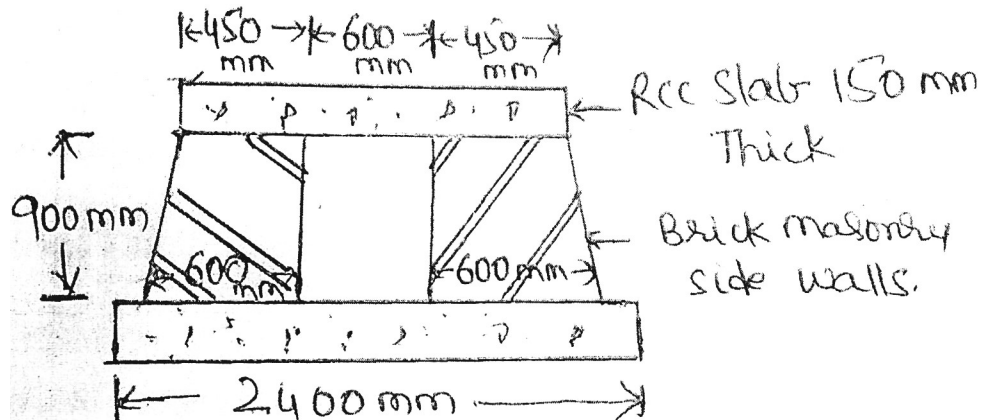

Fig. (C)

7. State the items to be included in the preparation of abstract estimate of a sanitary block.

8. Explain about the depreciation method of valuation of a property.

9. Explain about valuation tables.

10. The present value of a property is ₹ 20000. Calculate the standard rent per month. The rate of interest may be assumed as 6%.

PART—B   8×5=40

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Prepare the bar bending schedule and estimate the quantity of steel for RCC simply supported beam of clear span 4·0 m. The walls supporting the beam are 230 mm with bearing on both sides. Size of the beam is 230 mm × 450 mm. Concrete cover at ends of bar and sides are 30 mm and that of top and bottom is 25 mm each. The reinforcement details of the beam are given below :

Main straight bars at bottom — 12 mm, dia. — 3 Nos.

Main bent up bars — 12 mm dia. — 2 Nos. — cranked at a distance of L/5 from face of supports.

Hanger bars — 10 mm — 2 Nos.

Stirrups are 6 mm dia. and 150 mm c/c along full length

Weight of bars   :   12 mm — 0·89 kg/m;

10 mm — 0·62 kg/m;

6 mm — 0·22 kg/m; Use Fe 415 grade steel

(OR)

(b) Prepare the bar bending schedule of one way slab simply supported and find the quantity of steel.

Reinforcement : Fe 415 grade main rods 10 mm ϕ@150 mm c/c alternate bars cranked both the sides at 45° angle

Fe 415 grade distribution rods 8 mm ϕ@200 mm c/c

Bearing of slab on all four sides is 350 mm

Depth of the slab = 100 mm

Assume all covers 25 mm.

12. *(a)* Prepare the detailed estimate for the following items for a WBM road for a length of 100 m shown in Figure-D : 2+2+2+2

    (i) Collection and supply of 65 mm HBG metal for base course

    (ii) Collection and supply of 40 mm HBG for wearing course

    (iii) Spreading of 40 mm HBG metal for wearing course
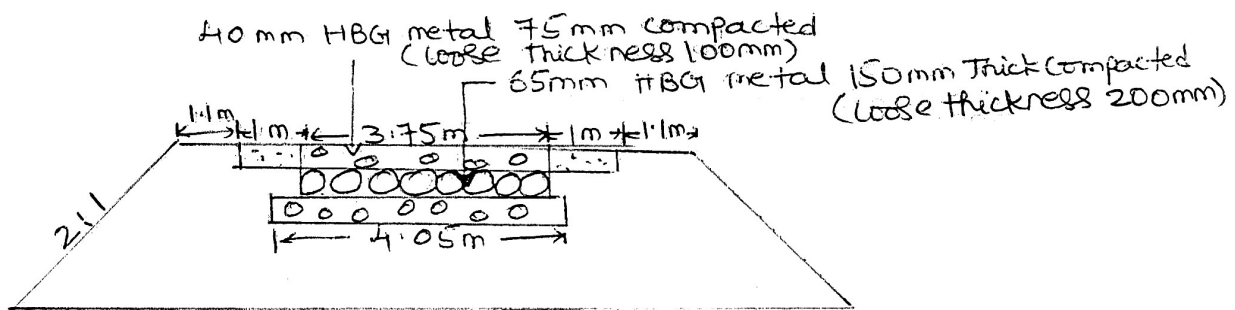
    (iv) Spreading of 65 mm HBG for base course

Fig. (D)

(OR)

(b) Prepare an estimate for 1 km length of a cement concrete trackway with 750 mm wide tracks. 1·5m c/c over 150 mm rammed kankar. The cross-section of the track is given in Fig. (E) :
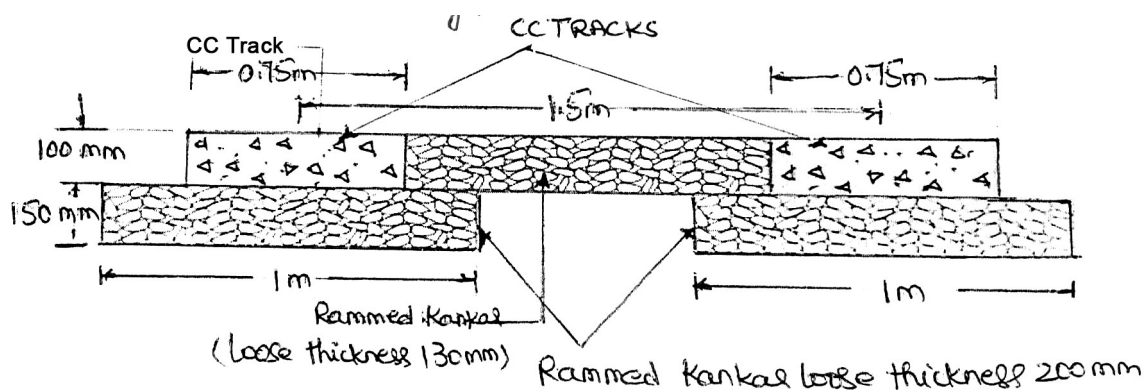

Fig. (E)

           4   *[Contd...*

13. *(a)* Details of pipe culvert are given in Fig. (F). Calculate the quantities of the following items of work. Take length of the headwall 6 m :

2+3+3

(i) Earthwork excavation for foundation under headwalls

(ii) Brick masonry in CM (1 : 3) for headwalls (no deduction for pipe)

(iii) CC (1 : 3 : 6) under headwalls

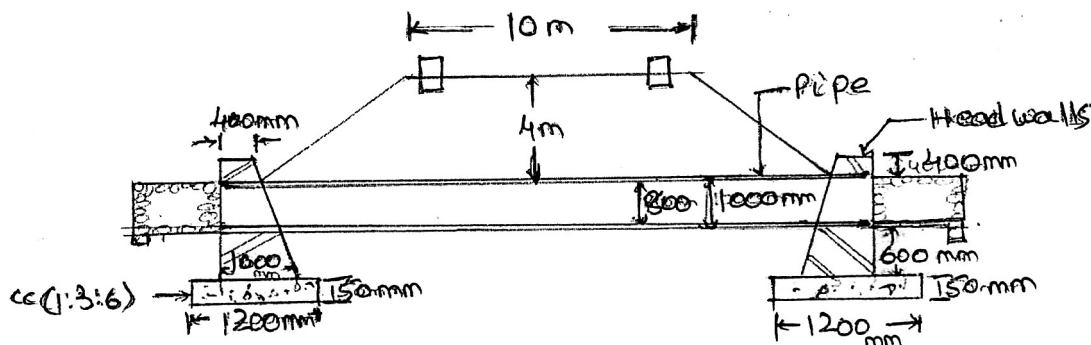Headwalls top width 400 mm, Bottom width 1000 mm

Fig. (F)

(OR)

(b) Calculate the quantities of the following items of work for tower head as shown in Fig. (G) :

3+5

(i) CC (1 : 4 : 8) for foundation using 40 mm HBG metal under the tower head

(ii) RR masonry in CM (1 : 4) for tower head

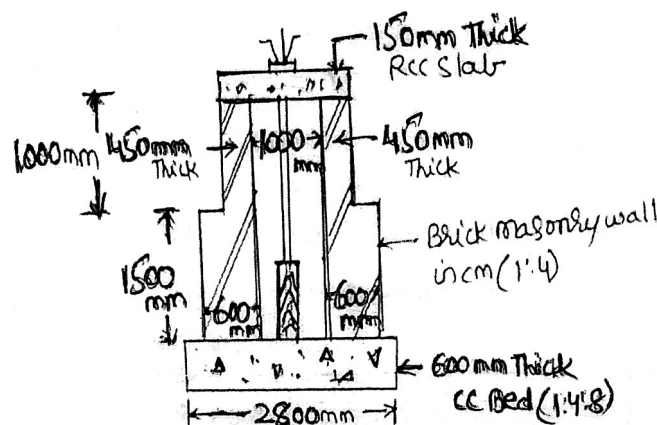Tower head is circular in plan with internal dia. of 1000 mm.

Fig. (G)

14. *(a)* Residential building constructed 12 years ago is situated on a plot whose total area is 400 m². The plinth area of the building is 240 m. The present cost of construction of the building is ₹ 30,00,000 and the cost of the land is ₹ 2000/m². The rate of depreciation for the value of the building is 1%. Calculate the total value of the property.

(OR)

(b) A residential building of 220 sqm plinth area is situated on a plot measuring 450 sqm. The building is let out for a rent of ₹ 6000 per month. The cost of land is ₹ 3000 per sqm. The usual outgoings are estimated as 20% of gross rent. Find the capitalized value of the property for 10% net yield.

15. *(a)* A residential building constructed on a plot measuring 525 sqm the construction cost of building is ₹ 1,75,000. The land was purchased by the owner at ₹ 145 per sqm. The total outgoings including sinking fund is ₹ 11,500. Work out the gross rent and net rent of the property, if the owner desires 6·5% return on the construction and 5% on the value of the land.

(OR)

(b) *(i)* List any four principles of rent fixation by CPWD

*(ii)* Differentiate between Fair rent method and Standard rent method. 4+4

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Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Calculate the quantities for the following items of work for an open well shown in Figure-H :   4+3+3

   (a) Earthwork excavation for open well

   (b) RR masonry in CM (1 : 6)

   (c) Laterite rough stone dry packing
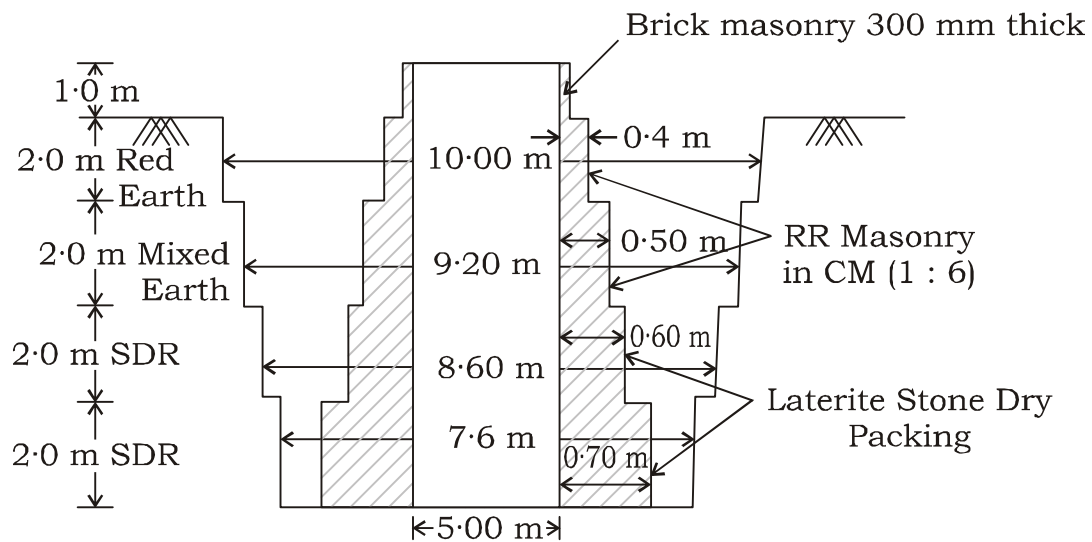
SECTION OF WELL (CIRCULAR)
OPEN WELL
Fig. (H)

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