Scheme – I

Sample Question Paper

Program Name : **Civil Engineering Program Group**
Program Code : **CE/CR/CS**
Semester : **Fifth**
Course Title : **Estimating and Costing**
Max. Marks : **70**

22503

Time: 3 Hours

Instructions:

1) All questions are compulsory.
2) Illustrate your answers with neat sketches wherever necessary.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.
5) Preferably, write the answers in sequential order.

Q.1 Attempt any FIVE of the following. **10 Marks**

a) State the necessity of Administrative Approval and Technical Sanction.
b) State the circumstances under which Revised and Supplementary Estimate is prepared.
c) Mention the unit of measurement for i) Skirting up to 150 mm height ii) Partition wall 100mm thick iii)Hand Railing iv)Woodwork for door frame.
d) State the data required for detailed estimate.
e) State four factors which affects rate analysis.
f) List four relevant software's for preparing estimate.
g) State the most accurate method for calculation of earthwork.

Q.2 Attempt any THREE of the following. **12 Marks**

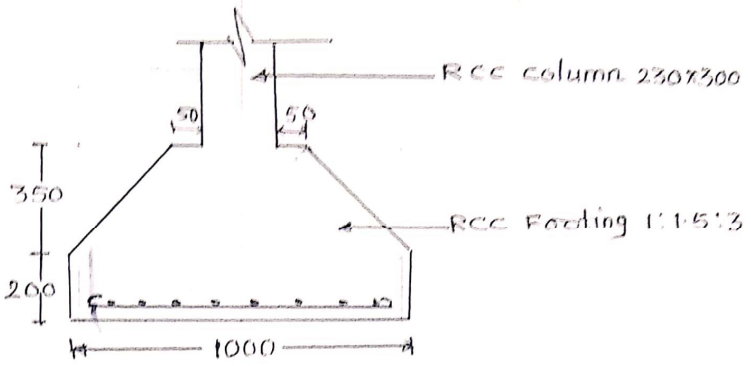
a) Explain the role and responsibility of estimator.
b) Prepare a check list of items of work in chronological order for construction of load bearing structure.
c) Explain the rules for deduction of opening in masonry and plastering work as per I.S.1200.
d) Prepare approximate estimate of a building from following data
   i) Plinth area -- 180sqm.
   ii) Plinth area rate -- Rs.3500/sqm.
   iii) Special architectural treatment--1% of cost of building
   iv)Electrification charges--8% of cost of building
   v) Water supply and sanitary installation—5% of cost of building
   vi)Contingencies—3% of cost of building
   vii) Supervisor charges--3% of cost of building

Q.3) Attempt any THREE of the following. **12 Marks**

a) Describe the procedure of preparing approximate estimate for road project.
b) Explain the data required for preparation of detailed estimate..

c) Describe the long wall and short wall method of estimating with suitable example.

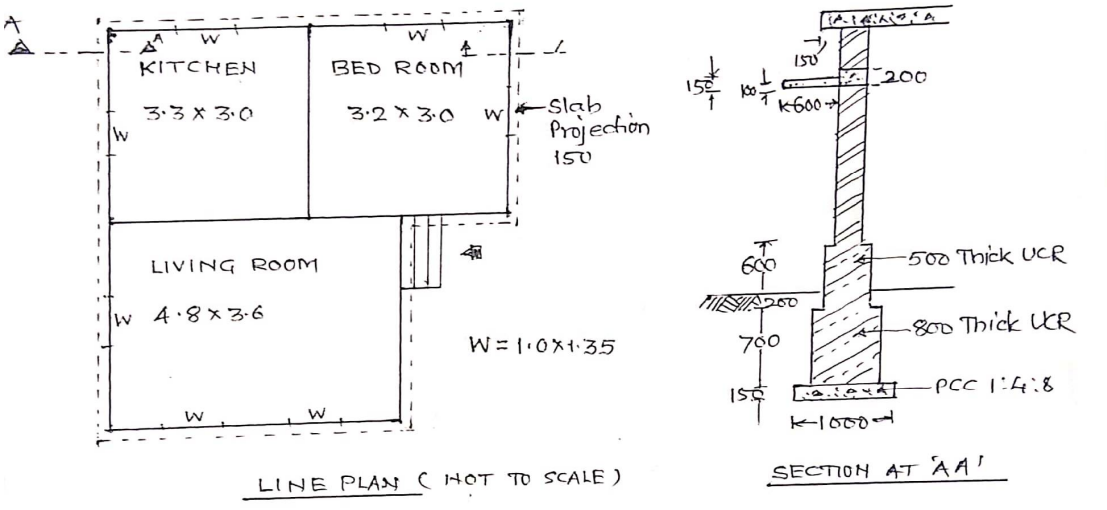
d) Fig no. 1 shows details of RCC column and footing. Work out the quantity of steel in footing on the basis of % steel.



Q.3 (d) Fig No. 1

Q.4) Attempt any <u>THREE</u> of the following. 12 Marks

a) Calculate the quantity of concrete in slab and chhajja on windows from fig. no2.



Q.4 (a), (b) Fig No.2

b) Calculate the quantity of UCR masonry in C.M.1:6 in foundation and plinth. from fig. no2.

c) A simply supported beam resting on two wall supports of 300mm thick with clear distance between supports 4500mm. The reinforcement provided in the beam is as follows. Calculate quantity of steel in beam.

Top bar	Bottom bar	Bent up bar	Stirrup
2Nos-10 Ø	3Nos-12 Ø	2Nos-16 ø	8 ø @150 c/c

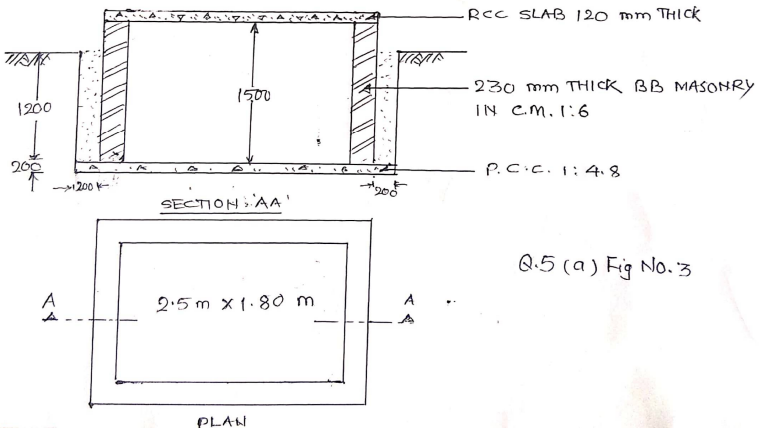
d) Calculate the quantity of earthwork for bank of canal from following data.
i) Top width: 1.8m. ii) R.L. of top of bank: 104.00m
iii) Side slope 2:1 on one side & 2.5:1 on other side

Chainage	30	60	90	120	150
Ground Level	101.50	101.30	101.150	101.00	99.00

e) Define task work and state the factors affecting task work.

Q.5) Attempt any <u>TWO</u> of the following. 12 Marks

a) Calculate the quantity of following items in respect of underground tank. Refer fig.no.3.
i)Earthwork in excavation
ii) P.C.C bed concrete 1:4:8
iii) BB masonry in C.M.1:6
iv) Internal cement plaster in C.M.1:6



Q.5 (a) Fig No. 3

b) Prepare the rate analysis for R.C.C slab in C.C.1:1.5:3.

c) A R.C.C. roof slab of overall size 6100mmX3300 mm and thickness 120 mm is provided with 12 mm diameter main bars bent up alternately and placed at 150mm c/c. The distribution bar of 8mm diameter is provided at 200mm c/c. The all-round cover is 15mm. Workout the quantity of plain steel. Prepare the bar bending schedule.

Q.6) Attempt any <u>TWO</u> of the following. 12 Marks

a) Calculate the quantity of cement and sand for following.
i) 35 cum. of P.C.C. in 1:3:6
ii) 180 sqm of cement plaster 20mm thick in C.M. 1:4

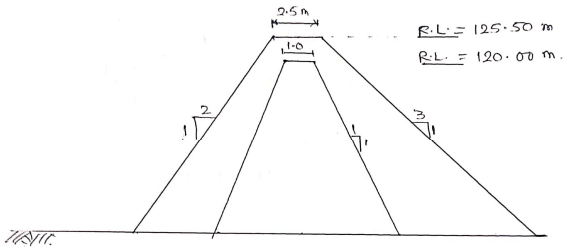
b) The formation level at starting chainage of a road is 530.00m. The road surface has rising gradient of 1in 100. The side slopes are 2:1 for embankment and 1.5:1 for cutting. Work out the quantity of earthwork for road using following data .

Chainage	0	30	60	90	120	150	180	210	240
R.L.of Ground	535.0	534.0	534.6	532.0	534.0	535.5	534.0	532.0	531.50

Use mean sectional area method

c) Work out the quantity of earthwork in hearting and casing for earthen dam from fig.no.4 using following data.

Chainage	50	100
Ground Level	102.30	109.00



Q. 6 (C) Fig No.4 (NOT TO SCALE)

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Scheme – I

Sample Test Paper

Program Name : **Civil Engineering Program Group**
Program Code : **CE/CR/CS**
Semester : **Fifth**
Course Title : **Estimating and Costing**
Max. Marks : **20**

22503

Time: 1 Hours

Instructions:

1) All questions are compulsory.
2) Illustrate your answers with neat sketches wherever necessary.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.
5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR of the following. **08 Marks**

a) Prepare checklist of items of work for framed structure.
b) Rule out measurement sheet and abstract sheet.
c) State the unit of measurement for following
i) Tile flooring ii) Barbed wire fencing iii) Formwork iv) W/C pan.
d) List the types of detailed estimate .State the methods of approximate estimate
e) State service units for Hospital building, Theatre, school and auditorium.
f) Define contingencies and work charged establishment along with their %.

Q.2 Attempt any THREE of the following. **12 Marks**

a) Explain the rules for deduction in masonry and plastering work.
b) Prepare the approximate estimate of residential building having plinth area 900sqm. If the cost of construction of similar existing structure in locality is Rs.7200000 for plinth area of 1200sqm.
c) Fig. No.1 shows the line plan and section of a wall of small building. Work out the quantity of UCR masonry in foundation and plinth using centerline method
d) Refer Fig.No.1. Calculate quantity of BB masonry in C.M. 1:4 using long wall and short wall method
e) Refer Fig.No.1. Calculate quantity of concrete in slab and lintel on doors and windows.

Scheme – I

Sample Test Paper

Program Name : Civil Engineering Program Group
Program Code : CE/CR/CS
Semester : Fifth
Course Title : Estimating and Costing
Max. Marks : 20

22503

Time: 1 Hours

Instructions:

1) All questions are compulsory.
2) Illustrate your answers with neat sketches wherever necessary.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.
5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR of the following. 08 Marks

a) Define centage charges with its provision.
b) Define Prime Cost and provisional sum.
c) Rule out format for bar bending schedule.
d) State four factors affecting rate analysis.
e) Define task work.
f) List four types of software for detailed estimate.

Q.2 Attempt any THREE of the following. 12 Marks

a) A R.C.C.slab of overall size 6600mm x3300mm having thickness 150mm reinforced with 12mm diameter main bars bent up alternately and placed @150mm c/c. The distribution bar of 8mm dia. Is provided @ 200mm c/c. Assume all-round cover 15mm .Find quantity of steel in slab
b) Prepare the face sheet for the detailed estimate of residential building with following data.
   i) Construction cost of building - Rs.12,60,500.
   ii) Contingencies - 4%
   iii) Work charged establishment - 2%
   iv) Electrification - 8%
   v) Water supply and sanitation - 10%
c) Describe the procedure of rate analysis of an item of work with example.
d) Calculate the quantity of cement and sand for 35 cum P.C.C .1:4:8
e) Calculate quantity of earthwork for a road with following data
   i)Formation width .- 10.0m
   ii) Slope in cutting - 1.5:1
   iii)Slope in banking - 2:1

Chainage	0	50	100	150	200
Ground Level	500.00	499.30	498.45	494.9	494.5
Formation Level	496.5	496.0	496.5	495.00	494.50