R07

Set No. 2

III B.Tech II Semester Examinations, APRIL 2011 ESTIMATING AND COSTING **Civil Engineering**

Time: 3 hours

Code No: 07A60105

Max Marks: 80

[16]

Answer any FIVE Questions All Questions carry equal marks ****

- 1. Explain the following general items of work involved in the estimation for a building along with the process of calculations.
 - (a) Earthwork in excavation.
 - (b) Earthwork in filling.
 - (c) Brick flat soling.
 - (d) Cement concrete in foundation.
 - (e) Masonry work in foundation.
 - (f) Damp proof course.
 - (g) Masonry work in superstructure
 - (h) 10 cm thick brickwork.
- 2. Describe the procedure for the calculation of rate per unit sq.m of the following items
 - (a) 2.5 cm cement concrete floor 1:2:4
 - (b) 2.5 cm cement concrete floor $1:1^{1/2}:4$. [16]
- 3. Calculate the quantity of earth work for 200 meter length for a portion of a road in a uniform ground the heights of banks at the two ends being 1.00 m and 1.60 m. The formation width is 10 meters and side slopes 2:1 using.
 - (a) Mid ordinate method and.
 - (b) Mean sectional area method. [16]
- 4. Give the detailed specifications of the following items of works.
 - (a) Snowcem washing
 - (b) Lime concrete in foundation. [8+8]
- 5. Explain the following methods along with an example.
 - (a) Sinking fund method
 - (b) Straight line method. [16]
- 6. Explain the following estimates
 - (a) Detailed estimate

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- (b) Repair estimate
- (c) Revised estimate and supplementary estimates due to reduction of cost
- (d) Quantity estimate.
- 7. Figure 1 shows longitudinal and cross sections at mid span and support of a RC T beam 26 cm by 40 cm over all including the slab thickness 10 cm. The beam of which particulars are shown in the figure is continuous over two equal spans 4 m clear and supported on 30 cm walls. Prepare the details of bars for the beam, giving a bar bending schedule and total weight of steel required. Assume other data. [16]



Figure 1:

- 8. Explain the following clauses used in conditions of contract.
 - (a) Security deposit.
 - (b) Compensation for day.

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Set No. 4

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Time: 3 hours

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[8+8]

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Answer any FIVE Questions All Questions carry equal marks ****

- 1. List and explain any four approximate methods of estimating for buildings. 16
- 2. Write down the material requirement for different proportions of cement concrete for 10 cu.m. 16
- 3. Give the detailed specifications of the following items of works
 - (a) Brickwork I class
 - (b) Lime concrete in foundation.
- 4. 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 and 1.0.m. It is required to calculate the quantity of earthwork by
 - (a) Prismoidal rule. [16]
 - (b) Trapezoidal rule.
- 5. Write a short note on the following with respect to contract document.
 - (a) Security deposit
 - (b) Retention money. [16]
- 6. Explain the following methods along with an example.
 - (a) Sinking fund method.
 - (b) Declining balance method.

7. Figure 2 shows longitudinal and cross sections at mid span and support of a RC T - beam 22 cm by 40 cm over all including the slab thickness 10 cm. The beam of which particulars are shown in the figure is continuous over two equal spans 4 m clear and supported on 30 cm walls. Prepare the details of bars for the beam, giving a bar bending schedule and total weight of steel required. Assume other data. [16]

- 8. Estimate the quantities for the following items for the figure 3 given below using long and short wall method. [16]
 - (a) Earth work excavation in foundation.

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Figure 2:

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(b) Lime concrete in foundation.

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- (c) 1st class brick work in foundation and plinth.
- (d) 2.5 cm thick damp proof course.



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Set No. 1

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Time: 3 hours

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Max Marks: 80

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Answer any FIVE Questions All Questions carry equal marks ****

- 1. Explain the following clauses used in conditions of contract.
 - (a) Maintenance period
 - (b) Arbitration
 - (c) Supply of water.
- 2. Enumerate different methods for estimating building works along with a suitable example. [16]
- 3. Give the detailed specifications of the following items of works.
 - (a) Earthwork in excavation in foundation.
 - (b) Coursed rubble stone masonry.
- 4. Describe the procedure for the calculation of rate per unit sq.m of 6 mm thickness plastering, 12 mm plastering thickness and 20 mm plastering thickness. 16
- 5. Prepare a detailed estimate for earthwork for a portion of a road from the following data.

Distance in m	RL of ground	RL of the formation
0	114.50	115.00
100	114.75	
200	115.25	
300	115.20	
400	116.10	Upward gradient 1 in 200 up to 600 m
500	116.85	
600	118.00	
700	118.25	Downward gradient 1 in 400
800	118.10	
900	117.80	
1000	117.75	
1100	117.90	
1200	117.50	

Formation width of road is 8m, side slopes are 2:1 in banking and $1 \frac{1}{2}$:1 in cutting. Draw L-section and cross sections. [16]

6. Draw reinforcement details along with curtailment lengths in the following slabs.

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- (a) Simply supported.
- (b) Continuous over several spans.

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- 7. A three storied building is standing on a plot of land measuring 900 sq.m. The plinth area of each storey is 450 sq.m. The building is of R.C.C framed structure and the future life may be taken as 70 years. The building fetches a gross rent of Rs.1600.00 per month. Work out the capitalized value of the property on the basis of 6% net yield. For sinking fund 3% compound interest may be assumed. Cost of land may be taken Rs.40.00 per sq.m. Other datas required may be assumed suitably. [16]
- 8. List and explain any four general items of work involved in the estimation for a building with its process calculation. [16]

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Set No. 3

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Time: 3 hours

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Max Marks: 80

[8+8]

[8+8]

Answer any FIVE Questions All Questions carry equal marks ****

- 1. Give the detailed specifications of the following items of works.
 - (a) Asbestos cement corrugated sheet roofing.
 - (b) Lime concrete in foundation.
- 2. (a) How do you classify the labour based on skills?
 - (b) List various types of labour used in construction.
- 3. Draw the canal sections for the following cases along with usual notations.
 - (a) Fully in excavation
 - (b) Partly in excavation and partly in embankment
 - (c) Fully in embankment. [16]
- 4. A colonizer intends to purchase a land of 100,000 sq m area located in the suburb of a big city to develop it into plots of 700 sq.m each after providing necessary roads and parks and other amenities. The current sale price of small plots in the Neighbourhood is Rs.25.00 per sq.m. The colonizer wants a net profit of 25%. Work out the maximum price of the land at which the colonizer may purchase the land. [16]
- 5. Write down unit of measurement, unit rate of payment and mode of measurement for the following general items of work.
 - (a) Ballies.
 - (b) Wood Piles..
 - (c) M. S. Structural works, R. S. J., Channels, Angles, Tee or bar etc.
 - (d) Steel work in Trusses.
 - (e) Cast ironwork Brackets, gratings, frames, pulley, manhole covers etc.
 - (f) Bolts including nuts and washers.
 - (g) Collapsible Gate.
 - (h) Steel rolling shutters, grills.
- 6. Write a short note on the following:
 - (a) Informal tender
 - (b) Acceptance of tender

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(c) Unbalanced tender.

7. Figure 4 shows longitudinal and cross sections at mid span and support of a RC T - beam 24 cm by 40 cm over all including the slab thickness 10 cm. The beam of which particulars are shown in the figure is continuous over two equal spans 4 m clear and supported on 30 cm walls. Prepare the details of bars for the beam, giving a bar bending schedule and total weight of steel required. Assume other data.



Figure 4:

- 8. Prepare a preliminary estimate for a framed four storied office building having a carpet area of 400 sq m for each floor. Assume areas occupied by corridor, verandah, lavatories, staircase etc as 25% of built up area and that occupied by walls and columns as 8.5% of the same. The following details may be sued for estimation
 - (a) Built-up area rate for ground floor (excluding foundation) = Rs1,500/- per sq m
 - (b) Built-up area rate for 1st and 2nd floor = Rs1,650/- per sq m

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- (c) Built-up area rate for 3rd floor = Rs1,800/- per sq m
- (d) Extra for foundation = 20% of superstructure cost
- (e) Extra for special architectural treatment = 1% of building cost
- (f) Extra for water supply and sanitary = 7% of building cost
- (g) Extra for electrical installation = 8% of building cost
- (h) Extra for work charge establishment = 10% of overall cost
- (i) Extra for other source = 5% of building cost.

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