PAPER ID-310211

Subject Code: KCE503

Roll No: | | | | | | | | | | | | | |

BTECH

(SEM V) THEORY EXAMINATION 2023-24

QUANTITY ESTIMATION AND CONSTRUCTION MANAGEMENT

TIME: 3 HRS **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

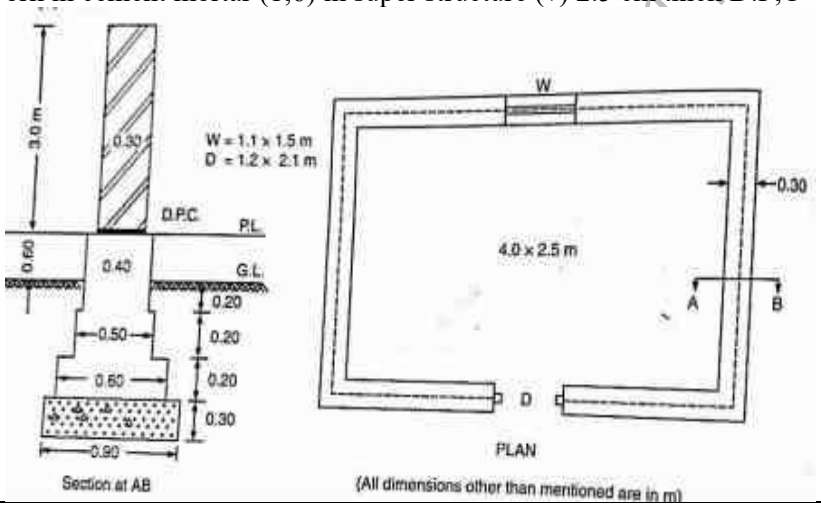
SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

Q no.	Question
a.	Write the units for the following materials; (i) Slackest lime (ii) Wood (iii) Bricks (iv) W.C. tub
b.	Define supplementary estimates.
c.	Calculate cost of carriage of 50,000 bricks by bullock carts, from a distance of 7 km on kuchha road. The cart can make two trips per day and can carry 250 bricks per trip. The wages of bullock cart may be taken as Rs, 50.00 per day including driver.
d.	What are the purposes of rate analysis?
e.	Write the phases of project cycle.
f.	What is the principle of CPM analysis?
g.	Give the element of Owing cost.
h.	Write factors affecting the selection of tractors.
i.	Define with neat sketch of total cost curve.
j.	What do you mean by the financing of projects?

SECTION B

2. Attempt any *three* of the following: **10x3=30**

a.	Figure shows a room of internal dimensions 4.0 m x 2.5 m. Calculate the quantities of the following items of work by center line method. (i) Earthwork in excavation in foundation (ii) Lime concrete in foundation (iii) Brick work in cement mortar (1:4) in foundation and plinth (iv) Brick work in cement mortar (1;6) in super structure (v) 2.5 cm thick D.P,C 
b.	Distinguish between rough cost estimate and detailed estimate.
c.	What do you mean by Gantt chart? Explain with examples.
d.	Give the comparison between Wheeled Tractor and Crawler tractor.
e.	Explain break even cost chart with neat sketch. Alpha associates have the following details. Fixed cost = Rs. 20,00,000, variable cost per limit = Rs. 100, selling price per unit = Rs. 200 Find (i) The break-even sales quantity (ii) The break-even sales (iii) If the actual production quantity is 60,000 find (a) Contribution (b) Margin of safety

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SECTION C

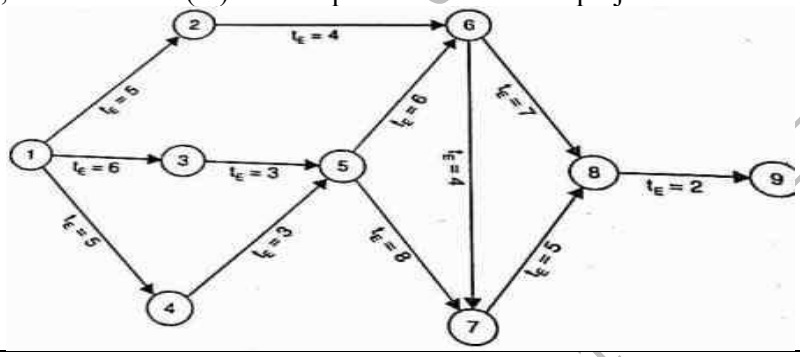
3. Attempt any *one* part of the following: 10x1=10

a.	Prepare a rough estimate by cubical content method for a proposed commercial complex for a municipal corporation for the following data, Plinth area = 500 m^2 /floor, Height of each story=3.5 m, No. of story =G+2, cubical content rate = Rs. 1000/m^3. Provide for a following as a percentage of structural cost (a) Water supply & sanitary arrangement =8% (b)Electrification = 6% (c) Fluctuation of rates = 5% (d) Contractors profit = 10% (e) Petty supervision & contingencies= 3%
b.	What is meant by preliminary estimates? What documents should be supplied along with this estimate.

4. Attempt any *one* part of the following: 10x1=10

a.	Workout quantity of dry material cost of material and required labour for 150 mm thick R.C.C. slab 1:2:4 and size of slab 9 m x 9 m. Assume labour and materials local rates.
b.	What factors influencing selection of contract system? Difference between SMD and retention money.

5. Attempt any *one* part of the following: 10x1=10

a.	A network diagram shown in fig. find (i) total expected time and variance for each activity (ii) find EST, LST and float (iii) Critical path and duration of project. 
b.	Discuss in brief the resource allocation problem. What are the methods of solving the problem?

6. Attempt any *one* part of the following: 10x1=10

a.	Workout the hiring cost per hour for the following data about a bulldozer. (i) Prime cost of bulldozer = Rs. 48 lakhs (ii) Annual investment = 12 % of average investment (iii) Utilization per year 7200 hours (iv) Salvage value of the bulldozer = 15% of prime cost (v) Maintenance and repairs = 40% of annual depreciation (vi) Annual overhead cost = Rs. 60,000 (vii) Fuel consumption = 30 liters per hour (viii) Cost of fuel Rs. 50 per litre (ix) lubricating oil consumption = 1.8 liters per hour (xi) Cost of lubricating oil = Rs. 250 per liter
b.	With neat sketch explain the concrete mix plant for ready mix concrete.

7. Attempt any *one* part of the following: 10x1=10

a.	A company has purchased equipment whose first cost is Rs. 100000 with an estimate life of eight years. The estimated salvage value of the equipment at the end of its life time is Rs. 20000. Determine the depreciation value and book value at the end of various years using the Sum of year's digits (SOYD) depreciation method.
b.	Define equivalence concept? Also write the principle of equivalence.