Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: CE409

Course Name: QUANTITY SURVEYING & VALUATION

Max. Marks: 100 Duration: 3 Hours

General Instructions: 1.Supplement answers with illustrations, wherever necessary
2. Assume any missing data suitably

PART A

Answer any two full questions, each carries 10 marks. Marks

1 a) When and where the following estimate are used (i) Annual Repair estimate (ii) Supplementary estimate. (5)

b) Outline the use of CPWD schedule of rates and how it is applied for the construction work in the different states of India. (5)

2 a) List out the any five items of work involved in a residential building with general specification of the work and give the unit of measurement of each item of work. (5)

b) Recall the General rules of Indian Standard(IS1200(Part-1)-1992) for the Method of measurement of Buildings and Civil Engineering works (5)

3 Develop unit rate of the work (DSR 2018 item No. 4.1.2), providing and laying in position 1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size) cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : **MATERIAL** : 0.57cu.m 20mm nominal size of stone aggregate @ Rs.1370/cu.m., 0.28cu.m 10mm nominal size of stone aggregate @ Rs.1350/cu.m., 0.425 cu.m of coarse sand (Zone-III) @Rs.1350/cu.m., 0.2833cu.m Portland cement @ Rs.4940/tonne, **LABOUR** : 0.10 Mason @ Rs.709/day; 1.63 Beldar @ Rs.558/day, 0.70 Bhisti @ Rs.617/day. **CARRIAGE PROVISIONS**: Stone aggregate below 40mm Rs. 103.77/cu.m.; coarse sand @Rs.103.77/cu.m. and for cement @ Rs.92.24/tonne. **HIRE CHARGES** of concrete mixer 0.07@Rs.800/day, Vibrator 0.07@Rs.370/day, **SUNDRIES** , LS, 14.30@Rs.2 (10)

PART B

Answer any two full questions, each carries 25 marks.

4 Prepare a detailed measurement and calculate the material quantity of a 100m (25)

length of a jail wall whose cross-section is given in **Fig-1**, the basement (60cm x 40cm) and wall is of I Class brick work in cement sand mortar 1:6 finished with 12mm thick plastering both side above GL with CM 1:6, Foundation(90x30) is CC 1:4:8. (All dimensions in the figure are in centimetres)

DATA:

1) CC1:4:8 ($1m^3$)-20mmAggregate@0.92cu.m, Sand@0.46cu.m., Cement@0.115cu.m

2) Brickwork in CM 1:6($1m^3$), - Brick @500no's, Sand@0.27cu.m, Cement@0.045cu.m

3) Plaster using CM1:6($100m^2$), – Sand@1.80cu.m, Cement@0.30cu.m.

5 Prepare a detailed measurement of the any FOUR item of work listed for building plan shown in **Fig-2** using CENTRE LINE METHOD. (25)

(a) Earth work excavation in foundation (b) First class brick work in CM1:6 for superstructures (c) Cement concrete (1:2:4) excluding reinforcement and shuttering for Roof and lintel (d) Wood work for Door & Window frames (e) painting of window grating

W2 (150cmx150cm) & D(120cmx210cm), Room size shown in the figure are inside dimensions. (Assume any missing data –State the assumptions clearly)

6 a) A simply supported beam of size 450 x 230 having a span of 6m is supported on a 30cm wall at both ends. The stirrups of 10mm diameter are provided at a spacing of 150mm c/c. The beam have main bar of 3 no's 20mm diameter at bottom including one bend up bar and stirrup holders are of 2 no's 16mm diameter at top. Main & Stirrup holder reinforcement is provided with a cover of 25mm. Calculate the total quantity of the reinforcement required for the stirrup for this beam. Also prepare an estimate of tor steel reinforcement for stirrup including cutting, bending , placing in position and binding, adopt the rate as Rs.95/kg. (Assume any missing data –State the assumptions clearly) (10)

b) Calculate the quantity of earth work for a portion of road of length 700m. Formation width of road is 8m, side slope in banking 2: 1 and 1:1 in cutting, road has a down gradient of 1 in 150, formation level 160 at distance 0. (15)

Distance (m)	0	100	200	300	400	500	600	700
Reduced Level	158.9	159.10	159.20	162.20	160.80	160.70	160.30	160.40

PART C

Answer any two full questions, each carries 15 marks.

7 a) List the factors affecting valuation. (5)

b) Explain the significance of sinking fund, How it is calculated. (5)

c) A person purchased a property for Rs.50,00,000/-. Assuming its salvage value after 40 years will be Rs. 5,00,000/-, determine amount of depreciation each year considering it to be uniform. (5)

8 a) A building situated in a class city is let out at Rs.10000/month. The total outgoing excluding sinking fund is estimated to be 20% of the gross income, calculate the capitalised value of the property if the present rate of interest is 6% and the life of the building is 50years.Percentage for sinking fund 3%. No outgoings are allowed other than the data given here. (10)

b) What is mean by Obsolescence; Write any two examples of obsolescence. (5)

9 a) What is mean by the Free hold and lease hold property? Name an example of lease hold property managed by Government of Kerala. (5)

b) Illustrate the belting method of valuation. (5)

c) Define the term Cost, Value & Price with suitable example. (5)

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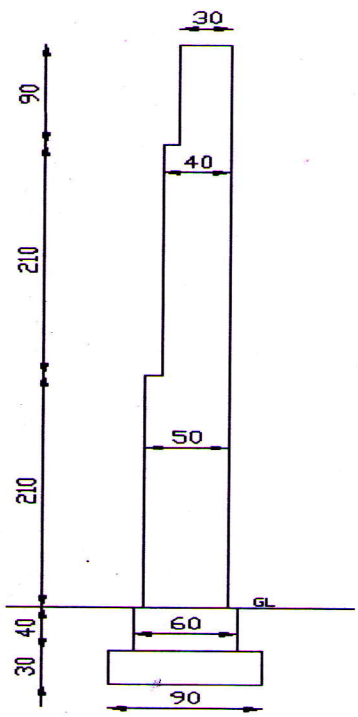

Figure-1

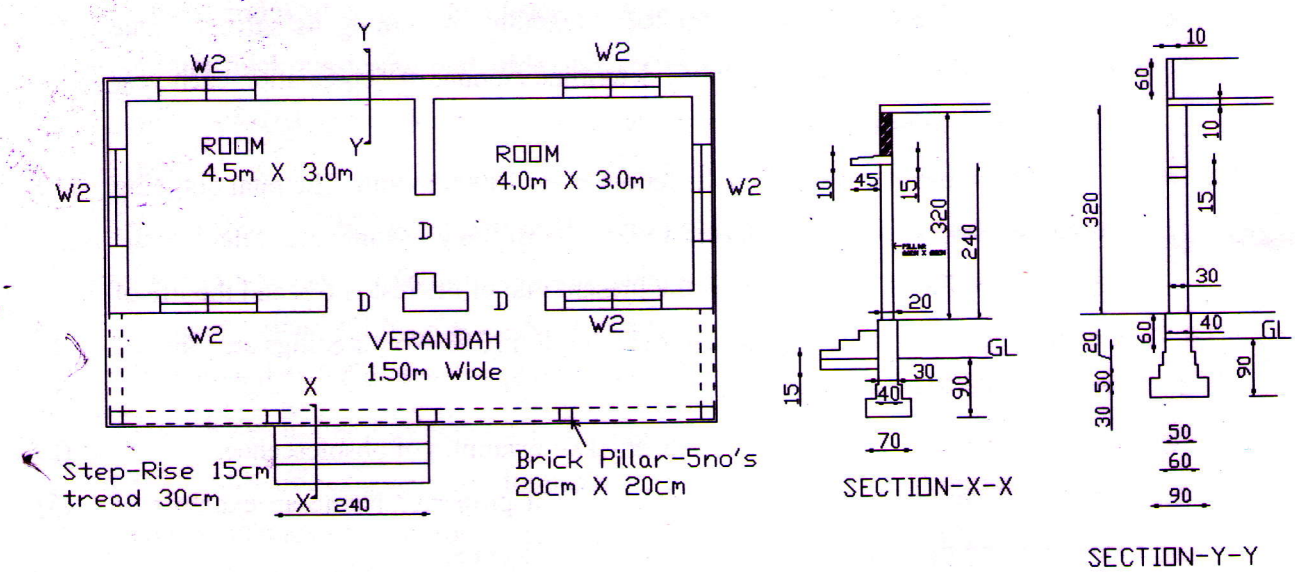
W2
Y
W2
ROOM
4.5m X 3.0m
Y
ROOM
4.0m X 3.0m
W2
W2
D
D
D
W2
W2
VERANDAH
1.50m Wide
X
Step-Rise 15cm
tread 30cm
X
240
Brick Pillar-5no's
20cm X 20cm
10
45
15
320
240
20
GL
30
40
90
15
70
SECTION-X-X
10
60
10
320
15
30
40
GL
20
60
90
30
50
50
60
90
SECTION-Y-Y

Figure-2