Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH (CIVIL ENGINEERING)
END SEMESTER EXAMINATIONS, MAY/JUNE 2022

SUBJECT: **ESTIMATION COSTING AND VALUATION PRACTICE [CIE 3252]**

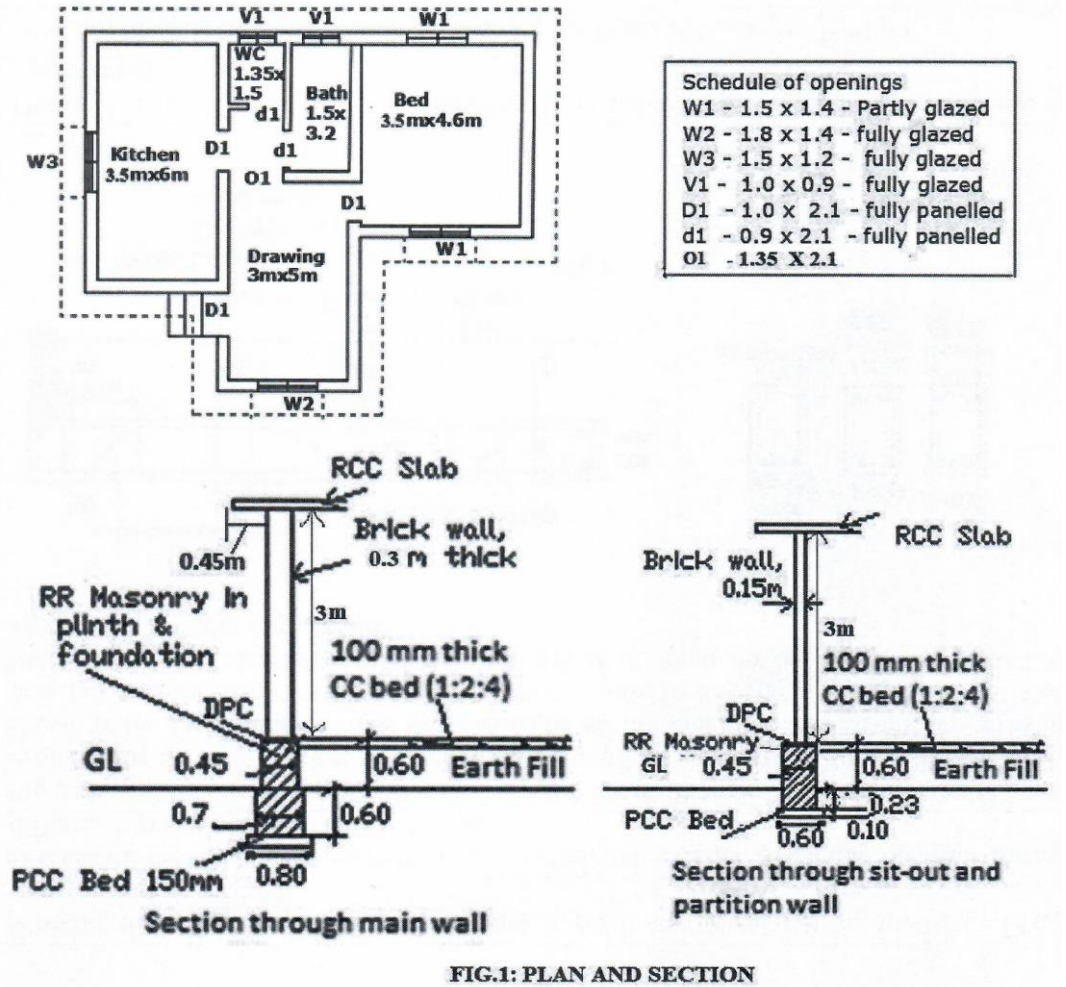
REVISED CREDIT SYSTEM

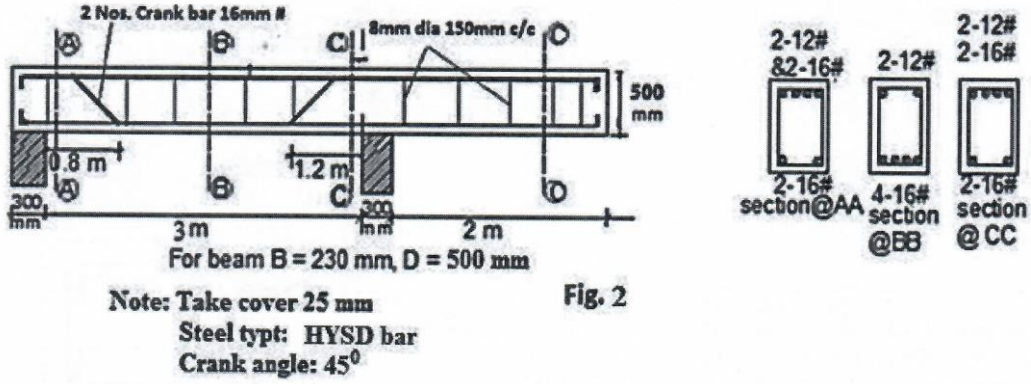
(_ / / 2022)

Time: 3 Hours Max. Marks: **50**

Instructions to Candidates:

- Answer ALL the questions
- Missing data may be suitable assumed.

Q.No		Marks	CO
1A.	The accompanying sketch (FIG 1.) shows the plan of a residential building and a section through the walls. Calculate the centerline length for the given plan using single line diagram and identify the different types of 'T' joints with corresponding numbers?  **FIG.1: PLAN AND SECTION**	02	1
1B.	Workout the quantity of RR stone masonry in plinth and foundation for the figure FIG.1 using centerline method.	05	1
1C.	Discuss on the mode of measurement for internal and external plastering on walls having different types of openings as per IS 1200.	03	1
2A.	Fig.2 shows the reinforcement details for a RCC beam. Prepare bar bending schedule and estimate the quantity of steel of crank bars, bottom bars and stirrups for the R.C.C. beam shown in the fig.2. Take bar bent up at an angle 45° for crank	03	3

<table>
<tr><td></td><td>bar and assume any missing data (all bars including stirrups are HYSD bar). Consider L-bend at the ends for all steel bars. Cover for reinforcement is 25 mm. unit weight of 16mm dia bar and 8mm dia bar 1.58 kg/m and 0.39 kg/m respectively.
 

Note: Take cover 25 mm
Steel typt: HYSD bar
Crank angle: 45^0
Fig. 2</td><td></td><td></td></tr>
<tr><td>2B.</td><td>Discuss on the various types of approximate estimate along with their significance in construction 2</td><td>03</td><td>1</td></tr>
<tr><td>2C.</td><td>Workout the quantity of internal plastering for the figure FIG. I as per IS 1200.</td><td>04</td><td>1</td></tr>
<tr><td>3A.</td><td>Differentiate between Revised estimate and Supplementary estimate with suitable example.</td><td>03</td><td>1</td></tr>
<tr><td>3B.</td><td>Calculate the quantities of earthwork in making a proposed road and draw the longitudinal section from the chainage O to 6 using the trapezoidal (average end area) formula and prismoidal formula. The RL of ground points at each chainage is as given in the table shown below. The proposed road is-having RL 99 at the chainage 2 and a uniform down ward gradient 1 in 100 throughout its length from 0 to 6 chainage. Formation width of the proposed road is 10 m and side slopes in cutting 1 : 1 and in banking 2: 1.
<table>
<tr><td>Chainage (50m)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>RL of ground</td><td>97.5</td><td>96.0</td><td>98.7</td><td>99.1</td><td>100.2</td><td>100.0</td><td>101.0</td></tr>
</table></td><td>4</td><td>1</td></tr>
<tr><td>3C.</td><td>Explain the different purpose of estimation and comment on the requirement of estimation c. with regard to the different stages of construction</td><td>03</td><td>1</td></tr>
<tr><td>4A.</td><td>Write detail specification on (i) First class brick work and (ii) RR stone masonry.</td><td>05</td><td>2</td></tr>
<tr><td>4B.</td><td>Workout unit rate for the Cement Concrete 1 :2:4 with graded stone chip from 20 mm to 6 mm down for reinforced concrete work excluding shuttering and reinforcement</td><td>03</td><td>4</td></tr>
<tr><td>4C.</td><td>Discuss on the factors affecting the valuation of an open land in Direct sales comparison method.</td><td>02</td><td>5</td></tr>
<tr><td>5A.</td><td>In a plot of land costing Rs. 10, 00,000, a building has been newly constructed at a total cost of Rs. 15, 00,000. The building consists of 8 flats for 8 tenants. The owner expects 8% return on the cost of construction and 6% return on the cost of land. Calculate the standard rent for each flat of the building given: i) rate of interest for sinking fund at 5% for 60 years life of the building ii) annual repair at 1 % of the cost of construction, iii) all other outgoings at 30% of the net return of the property, iv) insurance premium of Rs. 10,000 per annum v) scrap value at the end of the useful life of the building as 10%.</td><td>04</td><td>5</td></tr>
<tr><td>5B.</td><td>Explain in detail the essential conditions required for an agreement to become contract with (03) suitable example</td><td>03</td><td>6</td></tr>
<tr><td>5C.</td><td>Discuss on your choices on which type of contract is most appropriate to use if the scope is extremely well known, and which type is most appropriate if the scope is very uncertain?</td><td>03</td><td>6</td></tr>
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