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முழுப் பதிப்புரிமையுடையது ]

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Senior Technical Examination (Theory) for The Officers of Engineering Assistant Service in  
Irrigation Department - 2019 (2022)

**(06) Quantity Surveying**

Four hours

Answer **all** questions. Only non-programmable scientific calculators are allowed to use.

**Part A**

**Instructions for question No. 1:**

- Candidates are allowed to use a printed copy of the Standard Method of Measurement (SMM) at this examination.
- Use standard taking off sheets for the answers.
- If there is any query or problem in the given drawing and/or specifications, a separate query sheet should be prepared by the candidate giving his/her assumptions there itself and taking off quantities to be continued according to the assumption.
- Assume any missing dimensions and clearly indicate them in taking off sheets.
- The taking off check list prepared by you should be attached to the answer script.
- Clearly indicate the method of measurement used in the answer script.
- Standard abbreviations can be used wherever necessary.
- Items of works should be fully described using correct terms and abbreviations.

1. A proposed Project Director office Building is shown in drawing No: QS/EXAM/2020. Ground Floor plan and the Foundation details are indicate in the drawing (assume that ground level is same as every where). Follow the suitable method to take off quantities for following works items.

- 1:3:6 (40) Ct. concrete for the Foundation
- 150 mm - 225 mm R/R Masonry foundation

(65 marks)

**Part B**

2. Briefly Explain the following.

- (i) What is arbitration in the Construction work? and who will select the arbitrator?
- (ii) What is the Lump sum in the Estimation and what is the different between Lump sum and provisional Sum?
- (iii) What is the Turn Key Project?

(15 marks)

3. Calculate the unit cost ( $m^3$ ) of the following items from the given data.
- (a) 1:3:6 (20 mm) cement concrete excluding form work. (by Manual Mixing)
- (b) 150 - 225 mm Random rubble masonry work in 1:5 cement sand mortar.

1st Half from the District Buying Committee

Material/ Labor Category	Unit	Price	Haulage in km
Cement	50 kg bag	Rs. 970.00	9
Rubble (150-225)	cube	Rs. 5 800.00	25
Metal (20)	cube	Rs. 10 800.00	25
Metal (40)	cube	Rs. 9 200.00	25
Sand	cube	Rs. 9 000.00	7
Water	gl	Free	0
Tractor	Per day	Rs. 5 500.00	
Skilled Labor	Day (8 hr)	Rs. 3 300.00	
Poker Vibrator change with lab	Day (8 hr)	Rs. 3 650.00	
Unskilled Labor	Day (8 hr)	Rs. 1 395.00	

Overhead and profit Factor is 13%

- Assume that all the materials are transported by tractor.
- Any assumption made should be clearly stated.
- Use standard unit conversion whenever the unit conversion needed.

Tractor Rates						
S/N	Materials	Unit	Unloading	1st Mile	Sub Mile	Loading
1	Rubble and Metal	Cube	209.00	380.59	116.47	209.00
2	Bricks	1000	181.50	285.53	36.29	209.00
3	Lime-Slaked and Boiled	Bushel	3.30	11.06	2.35	3.30
4	River sand, Sea sand and Earth Gravel	Cube	90.20	400.84	120.22	191.40
5	Fire-Wood	C/Y ds	27.80	161.00	33.20	34.10
6	Calicut Tiles/ Ridge Tiles and Half round	1000 Nos	242.00	203.42	68.55	181.50
7	Cadjanrs (2 Leaves)	1000 Nos	75.00	203.42	64.05	83.60
8	Sawn Timber	Cu.ft.	3.30	10.22	4.17	3.30
9	Cement	Cwt.	6.60	4.75	2.13	6.60
10	Bitumen	Gls	0.83	405.03	3.16	0.83

(20 marks)

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