

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3170615****Date:13/12/2021****Subject Name:Engineering Economics, Estimation and Costing****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) Differentiate between Estimating and Valuation.	03
	(b) Write a note on following. (1) Contingencies (2) Work Establishment Charge.	04
	(c) For the given figure-1, compute the quantities of following items. (1) Earthwork in excavation (2) Cement concrete in foundation (3) 1 st class Brick masonry work up to G.L in c.m. (1:6) (4) Back filling in foundation trench.	07
Q.2	(a) Explain Cash Flow Diagrams with suitable Example.	03
	(b) Write a note on Pay Back Period Method.	04
	(c) Explain concept of “Time Value of Money”.	07
OR		
	(c) Explain Effect of Taxation on comparison of alternatives with Suitable Example.	07
Q.3	(a) Define Specifications and mention their objectives.	03
	(b) What are the essential principles of good specification writing?	04
	(c) Write a critical note on the liquidated damages and mention its circumstance under which the owner may lose his right to the liquidated damages.	07
OR		
Q.3	(a) Write a short note on ‘importance of specification’.	03
	(b) Write a specification for brickwork I class in c.m. (1:6)	04
	(c) Draft a tender notice for construction of Hospital, on behalf of R&B department, Government of Gujarat. The estimated cost of work is Rs. 12, 25, 73, 000/-.	07
Q.4	(a) Define “Rate analysis” and mention its Purpose.	03
	(b) Calculate the material Required for 12 mm thick plaster in wall for 100 sqm. Take (C.M. 1:6)	04
	(c) How can a contract be terminated?	07
OR		
Q.4	(a) Write a short note on SOR.	03
	(b) Calculate the material Required for 1 cum of R.C.C work for slab proportion (1:2:4) with steel reinforcement.	04
	(c) Differentiate between Departmental Execution and Contract System	07
Q.5	(a) Differentiate between Administrative approval and Technical Sanction.	03
	(b) Define the terms: (1) Price, (2) Cost, (3) Outgoings, (4) arbitration.	04

- (c) Using Prismoidal formula, compute the earthwork in cutting and filling from the following data. 07

Chainage (m)	0	200	400	600	800
Depth of cutting (m)	2	0.5	0	-	-
Depth of filling (m)	-	-	0	1.5	3.0

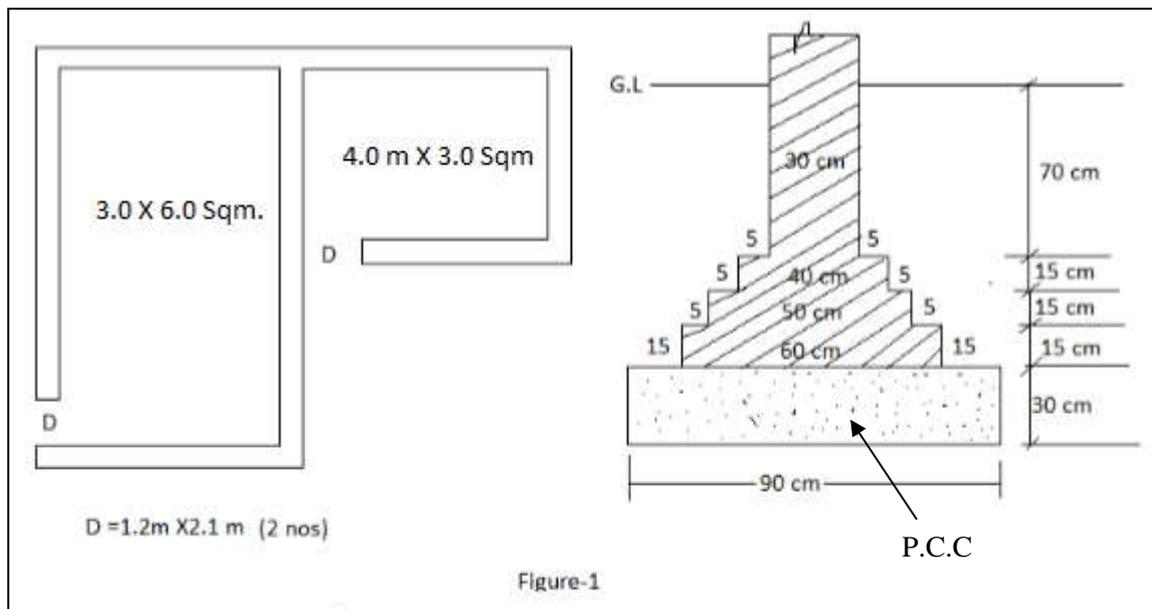
Formation width of road = 10 m.
 Side slope for filling H:V = 2:1
 Side slope for cutting H:V = 1:1
 Transverse slope of ground = nil

OR

- Q.5** (a) Differentiate Revised Estimate and Supplementary Estimate. 03
 (b) Define the terms: (1) Salvage value, (2) Market value, (3) Monopoly value, (4). Fair value 04
 (c) Calculate the volume of earthwork for a Proposed road having formation width 7.5 m and side slope 1:1 using mid sectional area Method. Details of road are given below. 07

Chainage (m)	0	30	60	90	120	150	180	210	240	270	300
G.L. (m)	10.55	10.5	10.4	10.35	10.2	10	9.8	9.65	9.6	9.4	9.2

Formation level of Road = 10.00 m



- Note: 1. Drawings are not to the scale
 2. All walls are 30 cm thick