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BE SECOND SEMESTER FINAL YEAR (CONSTRUCTION) - 2019

Subject: QUALITY MANAGEMENT IN CONSTRUCTION (ELECTIVE)

Time: Three hours

Full Marks: 100

PART - I

Answer of a question No. 1 & any two of the rest. Answer parts of any question SERIALLY with all parts of the same question SERIALLY & written together. This should be STRICTLY ADHERED to. Please use a FRESH page while answering a NEW question or any part of a new question. Assume any reasonable data as considered necessary.

Γ	CO1,	1. (A) Annotate: (any four) $2.5 \times 4 = 10$
- 1	CO2	a) Wholesale Price Index & its relation with Inflation
	&	b) Quality Management & its relation with Profit Break Even Point
- 1	CO3	c) Cash Reserve Ratio & its conflict with industrial fiscal policy
- 1	[14]	d) Devaluation of currency
	[14]	e) Total Quality Management in the light of ISO: 9000
-		(B) Assess critically the trends of Inflationary forces with Monitoring of the Prime Lending Rates as witnessed in a developed economy.
Γ	CO4	2. The table below estimates the monthly costs for a construction project; profit margin is 6% to be added to costs,
	[18]	with retention @ 10% repaid in three installments, one third on practical completion & a third six months after
		practical completion & rest three months hence. The normal payment terms of both a delay of one month is
		applicable on the contractor while paying & receiving money. Based on experienced the contractor assumes that
		the margin achieved will be reduced by increased costs. He assumes the costs to be 3% higher than estimated &
-		expects to recover another 3% of the actual incurred total costs as claim to be recovered six months after practical
		completion in one single shot. Further both the contractor & the client intends to reduce administrative expenses
		by making measurements & billing once in two months. Contractor alarmed by the financial implications intends
1		you to assess the financial implications by preparing Cash in & out plots both at monthly & two monthly
		intervals.
		Calculate the interest charges on lockup capital for an annual interest rate of 14%.
		Monthly estimated costs for a contract
		Month 1 2 3 4 5 6 7 8 9 10
ļ		Estimated 3 4 5 5 6 6 5 4 4 3
		Costs (Rs. Crores)
	CO1,	3. A manufacturer is required to supply 13,000 bags of PPC each week to replenish stocks. The store has very little
٠	CO2	storage space & thus requires the PPC bags to be delivered at the rate, at which they can be used. The
	&	manufacturer has the capacity to produce 27,000 cement bags per week. The cost of storing a bag per week is Re.
	CO3	1/- & the cost of setting up the equipment for a production run is Rs. 800/
	[18]	a) What is the optimum number of PPC bags to be produced in a production run?
	[10]	b) What is the total cost of producing & storing the site requirements?
L		c) How frequently should production runs be made?
	CO1,	4. From Quality Management principle the use of quality siliceous aggregates are mandatory at a retrofitting project
1	CO2	for micro-concreting. The requirement is 1500 tonnes per month. Cost of ordering is Rs. 1,100/- & cost of storing
	&	material is 50% of purchase cost. The cost per item depends on the total quality ordered as follows:
	CO3	(i) Less than 500 tonnes@ Rs. 18,800/- per tonne
. [[18]	(ii) 500 – 999 tonnes@ Rs. 18,500/- per tonne
	L ~ ~ J	(iii) 1100 tonne or more@ Rs. 18,200/- per tonne
		Calculate the optimum order quantity & optimum total cost per month of purchasing, storing & ordering the
L		material.

PART-11

Quality Management in Construction-4th year 2nd semester, 2019

Sub code: CON/T/423C

Ref:EX/CON/T/423C/2019

Q1. A) Define Quality in Construction. Elucidate reasons for carrying such activities .(CO1)

B) Mention the activities of PDCA . Explain any six activities- at least one from each of P/D/C/A. (CO2)

5+6=11

- Q2. A) Describe essential elements of a project specific construction Quality Control Plan. (CO1)
 - B) Describe each in brief.(CO2)

7+7=14

- Q3. A) Draw a neat sketch of construction process . Describe each of them in brief. (CO1)

 B)Make a flow chart of total quality control.(CO2)

 8+5=13
- Q4. A) Describe the importance of proper handling & testing of TMT re-bars.(CO1)
 - B) Mention relevant points of storage & handling.(CO2)
 - C) Discuss some aspects of construction safety guidelines. (CO3)

4+4+4=12