

Visvesvaraya Technological University, Belagavi

MODEL QUESTION PAPER- 6<sup>th</sup> Semester , B.E (CBCS) CV

Course : 15CV61 –Construction Management and Entrepreneurship

Time : 3 hours

Max Marks : 80

Note : (1) Answer any FIVE full questions selecting any one full question from each module.

(2) Assume missing data suitably and clearly mention in the answer script about it

**Module-1**

1a	Identify the Stake holders in a construction project and Explain the Roles of Contractor and PMC Consultants	08
1b	Define Lag time and Lead Time in a PND ? explain with diagram the different relationship between predecessor and successor activities using this concept	08

**OR**

2a	Explain the Concept of Work break down Structure with an Example	06
2b	Using CPM Method determine “ Critical activities” and Critical path for the network given below. What is project duration ?	10

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graph LR
    1((1)) -- "A, 12" --> 2((2))
    1 -- "B, 14" --> 3((3))
    2 -- "D, 9" --> 4((4))
    3 -- "C, 8" --> 4
    3 -- "E, 10" --> 5((5))
    4 -- "G, 7" --> 6((6))
    5 -- "H, 4" --> 6
    4 -.- "F, 0" -.- 5
  
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**Module-2**

3a	List out various Inventory Control Techniques adopted in Material Management and Explain A-B-C analysis ?	08
3b	For a typical Project of Cost Rs Cr 900 , has its Direct Labour cost of 22% of Gross. Productive labour cost is 35% of labour Cost. By optimization of Work , there was 38% reduction in Labour non Productivity as compared to earlier. Estimate the total Cost of Saving in Labour productivity by above process in terms of Rs Cr and in % wrt Project Cost , Labour Cost and Productive labour Cost	08

**OR**

4a	List out Factors behind the Selection of Construction equipment's perform assigned tasks / Project's need	04
4b	An Excavator with a bucket capacity is 1.5 cum and rated horse power is 180HP is used for excavation of ordinary soil. Following information is available 1. Capital cost of excavator = Rs80 lakhs , Charged to the project : 2.25% per month of capital cost , 2. Employment hrs / month = 250 hrs ,Technical life 5 yrs , salvage value = 10% of Capital Cost 3. Prime mover = diesel , load factor = 0.85 , crank case capacity = 30 lit. , time between oil change = 100 hours. 4. Operational correction factors = 0.7 , load factor = 0.85 , bucket swing factor = 1.00 , bucket fill factor = 0.9 5. Operational manpower cost = Rs 175 / hr	12

	<p>6. Time cycle for 1 operation of excavator = 45sec for 55 min hour.  7. Routine maintenance and major repair cost = 120% of depreciation cost.  8. Diesel rate = rs 70 / lit and lube rate is rs 200 / lit</p> <p>Estimate :</p> <ul style="list-style-type: none"> <li>• Hourly production rate of the excavator in cum / hr</li> <li>• Cost of ownership and operation in rs/ hr</li> <li>• Unit rate of equipment operation for Excavator in Rs / cum.</li> <li>• Estimate The Number of Excavator needed to do a Job of Earthwork in Sub Grade having a Compacted Volume Quantity of 70,000 Cum , to be executed in 24 days with 10 hrs working per day.</li> </ul> <p>Determine the number of dumpers required for transportation if average lead from borrow area to site is 8kms and dumper have a capacity of 12 cum , its forward speed is 15 kmph , backward speed is 30 kmph , unloading time = 4 min , repositioning time = 2 min.  performance efficiency factor = 50min hour time</p>	
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**Module-3**

5a	Briefly Explain the construction Quality process.	06
5b	List out broad principles of quality management systems as outlined under ISO 9000	04
5c	Describe safety measures to be adopted while doing Hot Bituminous Works to avoid accidents	06

**OR**

6a	Define Values , Morals and Ethics and List out seven ethical principles applicable to construction industry	06
6b	What is importance of tool box meeting and good house keeping in construction safety management?	04
6c	Explain “ Quality Audit and its Process”	06

**Module-4**

7a	Discuss briefly “ concept of engineering economic study and its principles”	08
7b	What is the Total Capitalized cost of a building which have construction cost Rs 1,50,000/- immediately , Rs 15000 expenses each year for first 5 yrs and annual year end maintenance cost of Rs 5000/- plus the expenditure of Rs 35000 at the end of each 10years period for replacement purpose ? assume rate of interest = 9.5% P.a	08

**OR**

8a	Cash Flow for two projects X & Y are given below using annual worth method make a selection from following alternatives : assume min attractive rate of return $i^*=10\%$ <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">End of Year</td> <td style="width: 10%;">0</td> <td style="width: 10%;">1</td> <td style="width: 10%;">2</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> </tr> <tr> <td>PRO X</td> <td>-50000</td> <td>5000</td> <td>17500</td> <td>30000</td> <td>42500</td> </tr> <tr> <td>PROJ Y</td> <td>-50000</td> <td>40000</td> <td>15000</td> <td>15000</td> <td>15000</td> </tr> </table>	End of Year	0	1	2	3	4	PRO X	-50000	5000	17500	30000	42500	PROJ Y	-50000	40000	15000	15000	15000	10
End of Year	0	1	2	3	4															
PRO X	-50000	5000	17500	30000	42500															
PROJ Y	-50000	40000	15000	15000	15000															
8b	What is present equivalent money value of Rs 75,000/- (a) 5 years from now (b) 5 years before today , take discounting rate = 12% compounded quarterly	06																		

**Module-5**

9a	Define Micro , small and medium enterprises ? list and explain characteristics of MSME	08
9b	List and Explain the Different sources of Finance for Entrepreneur	08

**OR**

10a	What id DPR , Discuss the guidelines for the preparation of model project report for starting new venture	08
10b	Explain the stages in Entrepreneur / entrepreneurial process	08