Bachelor of Computer Science and Engineering Examination, 2022

(4th Year, 2nd Semester)

Industrial Management

Time: Four Hours

Full Marks: 70

Different parts of the same question should be answered together

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1.   **Answer any one from (a) and (b) in this block**   1 x 7 = 7

(a) Classify and summarise functions of management.   1 + 6

(b) Explain with appropriate illustration, VA/VE.   7

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2.   **Answer any one from (a) and (b) in this block**   1 x 7 = 7

(a) Enumerate the steps involved in work study.   7

(b) Define productivity. Discuss the factors affecting productivity.   2 + 5

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3.   **Answer any three from (a),(b), (c) and (d)**   3 x 14 = 42

(a) Differentiate recruitment from selection. Draw out the flow chart of selection process. Describe the tests involved in the selection process.   4 + 4 + 6

(b) Describe process production. What are the advantages and disadvantages of a cellular production? Explain with an illustration MRP.   3 + 3 + 8

(c) From the following data draw out a network diagram, calculate the critical path by activity on arrow method, find the project completion time. How much is the float time of activities A, B and C ?   5 + 4 + 2 + 1 + 1 + 1

Activity	Immediate Predecessor(s)	Activity time (weeks)
A	--	4
B	--	3
C	--	25
D	A	30
E	A,B	4
F	C	15
G	C, E	8
H	C, E	6
I	D, G	3
J	F, H	3

(d) A mechanical device with an economical life of 5 years will cost Rs. 50,000 for purchase. Maintenance will cost Rs. 2,000 per year starting from the 1st year. The device will generate revenues of Rs. 12,000 each year.

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There will be an upgradation cost of Rs 10,000 for the device at the end of 3rd year. Salvage value will be Rs 20,000. If the required rate of return is 10%, should the device be purchased based on

    (i) NPV?   4

    (ii) IRR?   10

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4.   **Answer any two from (a), (b) and (c)**   **2 x 7 = 14**

(a) A marketing manager has five salesmen and five sales districts. Considering the capabilities of the salesmen and nature of the districts, the marketing manager estimates that the sales per month (in hundred rupees) for each salesman in each district would be as follows:

		Districts				
		A	B	C	D	E
Salesmen	1	32	38	40	28	40
	2	40	24	28	21	36
	3	41	27	33	30	37
	4	22	38	41	36	36
	5	29	33	40	35	39

Solve the assignment of salesmen to districts that will result in maximum sales. Apply Hungarian method only.   7

(b) From the following transportation cost matrix, make initial allocation by LCM method.   7

	D1	D2	D3	D4	SUPPLY
S1	19	30	50	10	7
S2	70	30	40	60	9
S3	40	8	70	20	18
DEMAND	5	8	7	14	34

(c) A furniture dealer deals in only two items – tables and chairs. He has Rs. 50,000 to invest and has storage space of at most 60 pieces. A table costs Rs. 2500 and a chair costs Rs. 500. He estimates that from the sale of one table, he can make a profit of Rs. 250, and that from the sale of one chair a profit of Rs. 75. He wants to know how many tables and chairs he should buy from the available money so as to maximise his total profit, assuming that he can sell all the items which he buys. (use linear programming method).   7