PAPER – 16 : STRATEGIC COST MANAGEMENT
SUGGESTED ANSWERS
SECTION – A

1.

(i)   (A)

(ii)   (C)

(iii)   (D)

(iv)   (B)

(v)   (C)

(vi)   (A)

(vii)   (B)

(viii)   (A)

(ix)   (A)

(x)   (A)

(xi)   (A)

(xii)   (A)

(xiii)   (C)

(xiv)   (D)

(xv)   (C)

SECTION – B

2.

(a)

(i)   Relevant cost if the contract is accepted ₹ 93 lakh.

(ii)   Irrelevant cost if the contract is accepted ₹ 18 lakh.

(b) Decision:

Since the offer price of contract is ₹ 1 crore and its total relevant cost is ₹ 93 Lakh these figures clearly shows that the offer should be accepted.

3. (a)

Sales price per unit		₹ 4.50	
	Transfer to Division Band sale to outside parties	Sale to outside parties only	
Sales (units)	200000	140000	
	₹	₹	
Sales value (140000 units)	630000	630000	
(60000 units)	135000	Nil	
	765000	630000	
Less: Variable cost	200000	140000	
Contribution	565000	490000	
Less: Fixed overhead	400000	360000	
Net profit	165000	130000	
Average assets employed	1200,000	280000	
Return on investment	13.75%	46.43%	

Justification: If the component is transferred to Division B as well as sold to outside parties, it is more profitable as the contribution and net profit are more than the existing proposal. Therefore selling the components to Division B at D 2.25 per unit is in the overall interest of the company is justified.

3. (b)

(i)   Target Cost per unit ₹ 765

   The breakup of the target cost of ₹ 765 per unit is as follows:

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	(₹)
Direct Materials	400
Direct Labour	60
Direct Machinery Costs	70
Direct Manufacturing Costs	530
Add : Manufacturing Overheads	51
Other Operating Costs	184
Full Product Costs	765

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(ii)   **Target Product Profitability**

Particulars		**Per Unit (₹)**	**Total for 200000 Unit (₹)**
1.	Sales	900	180000000
2.	Cost of Goods Sold	581	116200000
3.	Gross Margin (1 − 2)	319	63800000
4.	Operating costs	184	36800000
5.	Operating Profit (3 − 4)	135	27000000

4. (a)
Rates for each Activity

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Activity	**Activity Rate (₹)**
Providing ATM Service	0.50
Computer Processing	0.40
Issuing Statements	1.60
Customer Inquiries	0.60

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Cost of each Product

	Checking Accounts (₹)	Personal Loans (₹)	Gold VISA (₹)
Cost of each Product	52.67	42.80	46.60

4. (b)
The Phases of Value Analysis are summarized as follows:

(1) **Origination:** The phase of origination starts with the identification of a project to undertake value analysis. After selecting the project, a project team consisting of experts from various fields and departments is constituted.

(2) **Information:** The second phase is that of collecting relevant information. In this phase, the relevant facts relating to specifications, drawings, methods, materials, etc. are collected. Costs are, also, ascertained for each of the elements that are being studied.

(3) **Functional Analysis:** Then follows the important phase of functional analysis. After familiarisation with the relevant facts & figures, a functional analysis is carried out to determine the functions and uses of the product and its components. The cost and importance of each function are identified. A value index is computed on the basis of cost benefit ratio for each of the functions),

(4) **Innovation:** This is the creative phase concerned with the generation of new alternatives to replace or remove the existing ones. The objective is to produce ideas and to formulate alternative means and methods for accomplishing the essential functions and improving the value of the element under consideration.

(5) **Evaluation:** During the stage of evaluation, each and every alternative is analysed and the most promising alternatives are selected. These alternatives are further examined for economic and technical feasibility. The alternatives finally selected must be capable of performing the desired functions satisfactorily.

(6) **Choice:** In this phase, the decision makers choose the best of alternatives. The programs and action plans are then developed to implement the chosen alternative.

(7) **Implementation:** The chosen alternative is put to the actual use with the help of the programs and action plans. The progress of implementation is continuously monitored and followed up to ensure that the desired results are achieved.

5.
(a) Computation of Variance

(i)	Material Price Variance =	2000 (Adv)
(ii)	Material Usage Variance =	10000 (FAV)
(iii)	Wage Usage Variance =	20000 (Adv)
(iv)	Wage Efficiency Variance =	32000 (Fav)
(v)	Variable Overhead expenditure Variance =	20000 (Adv)
(vi)	Variable overhead efficiency Variance =	16000 (Fav)
(vii)	Fixed overhead expenditure Variance =	2000 (Fav)
(viii)	Fixed overhead Capacity Variance =	16667 (Adv)
(ix)	Fixed overhead efficiency Variance =	6667 (Fav)
(x)	Sales Margin price Variance =	40000 (Adv)
(xi)	Sales Margin Volume variance =	8000 (Adv)

(b) Reconciliation of Profit.

	₹.
Budgeted Profit	80000
Add: Favorable Variances:	66667
Less: Adverse variances:	(106667)
Actual Profit (for the period):	40000

6. (a)

The given problem is a standard minimization problem.

Subtracting minimum element of each row from all the elements of that now, the given problem reduces to

JOBS					
Mechanist	1	2	3	4	5
A	8	1	1	0	6
B	7	5	6	0	5
C	5	3	4	0	2
D	1	3	6	0	2
E	3	4	3	0	4

Subtract the minimum element of each column from all the elements of that column. Draw the minimum number of lines horizontal or vertical so as to cover all zeros.

Since the minimum number of lines covering all zeros is equal to 4 which is less than the number of columns/ row (=5), the above table will not provide optimal solution. Subtract the minimum uncovered element (=2) from all uncovered elements and add to the elements lying on the intersection of two lines, we get the following matrix.

4

Since the minimum number of horizontal and vertical lines to cover all zeros is equal to five which is equal to the order of the matrix, the above table will give the optimal solution. The optimal assignment is made below.

JOBS

Mechanist	1	2	3	4	5
A	7	[0]	✗	2	6
B	4	2	3	[0]	3
C	2	✗	1	✗	[0]
D	[0]	2	5	2	2
E	✗	1	[0]	✗	2

The optimal assignment is given below:

Mechanist	Job	Wages (₹)
A	2	3
B	4	2
C	5	4
D	1	3
E	3	9
		21

The total least cost associated with the optimal mechanist-job assignment = 21

6. (b)

(i/ ii/ iii)

**Simulation Worksheet: (Starting Time at 10 AM)**

Client No.	Random Nos. for arrival	Time between arrivals	Arrival time at (hours)	Service beginning (hours)	Random Nos. for services (minutes)	Service time (minutes)	Service end (hours)	Time client waiting (minutes)	Time Office idle (minutes)
1.	2	1	10.01	10.01	60	14	10.15	--	1
2.	48	8	10.09	10.15	73	14	10.29	6	—
3.	43	8	10.17	10.29	61	14	10.43	12	—
4.	75	15	10.32	10.43	35	10	10.53	11	—
5.	89	15	10.47	10.53	28	6	10.59	6	—
6.	36	8	10.55	10.59	16	6	11.05	4	—
7.	96	25	11.20	11.20	80	14	11.34	—	15
8.	47	8	11.28	11.34	46	10	11.44	6	—
9.	36	8	11.36	11.44	60	14	11.58	8	—
10.	61	15	11.51	11.58	11	4	12.02	7	—
								60	**16**

From the table above, it may be seen that the simulation study has been carried out on the queue system for duration of 122 minutes (10 AM to 12.02 PM). During this time, TIME OFFICE of the agency was idle for a total for 16 minutes.

Probability of the time office being idle 13.11%
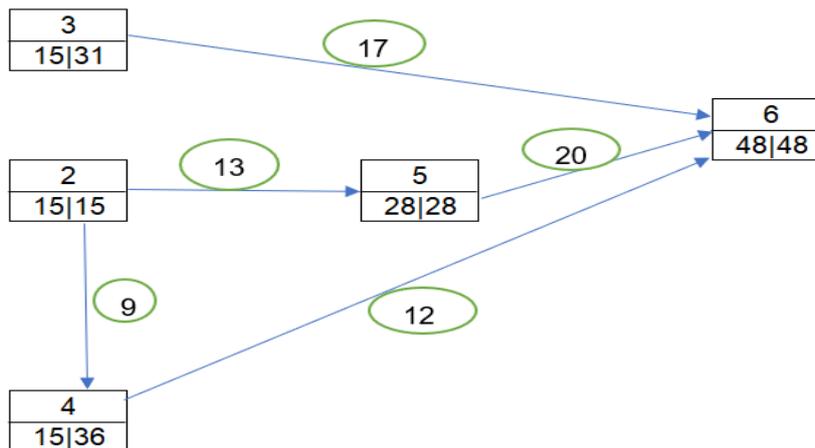
7. (a)

(i)

Network Diagram before Fire
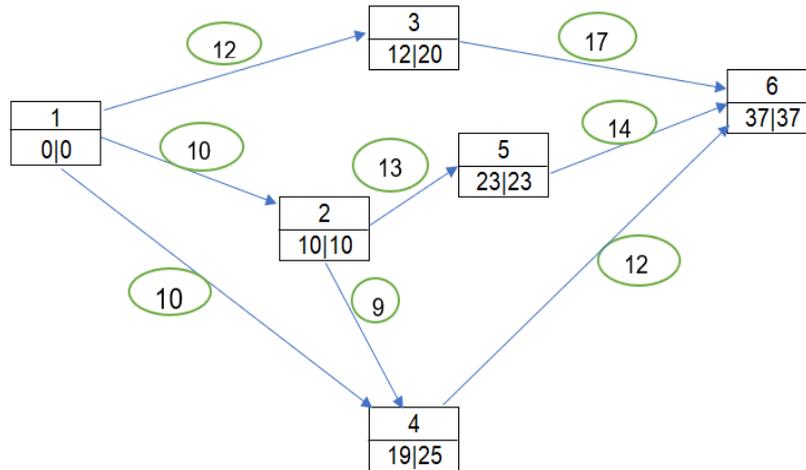
Activities 1-2, 1-3 and 1-4 had already been completed before the fire. After fire, 15 days are over and 31 days (46 days-15 days) remain with the following outstanding activities:

Activity	Duration (Days)
2-4	9
2-5	13
3-6	17
4-6	12
5-6	20

Network Diagram after Fire

(ii) New Expected Project Duration is 48 days and Revised Critical Path after fire is 2-5-6.

(iii) Standard Deviation of the Project = 1.41

Using Z value, we have Z = -1.42

Using area under standard normal curve, the probability of achieving 46 days is = 8%

7. (b)

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Selling Price

	For 4 Boats (₹)	For 8 Boats (₹)
Selling Price / Boat	21,264	20,097.63

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Price for 3rd and 4th Boats:

	Amount (₹)
Selling Price / Boat	19,968

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8. (a)

    (i)   Dolls = 600

    (ii)   Price = ₹ 12

    (iii)   Profit (Maximum) = ₹ 3400

8. (b)

    (i)   Straight Line Trend $Y_e = 42 + 0.20\ \chi$

    (ii)   **Sales (₹ in Million) for:**

          Year 2019 = ₹ 42.20 Million

          Year 2025 = ₹ 43.40 Million

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