Roll No. .....

NOV 2019

FINAL
GROUP-II PAPER-5
ADVANCED MANAGEMENT ACCOUNTING

Total No. of Questions – 7 | Total No. of Printed Pages – 12

Time Allowed – 3 Hours | Maximum Marks – 100

HDW

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate has not opted for Hindi Medium, his/her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Answer any **five** questions from the remaining **six** questions.

Working notes should form part of the respective answers.

No Statistical or other table will be provided with this question paper.

Marks

1. (a) SRB Ltd. manufactures products X, Y and Z. The following details relate to a certain production period : **5**

	X	Y	Z
Direct Material ₹/u	75	60	60
Direct labour ₹/u (at ₹ 15/hour)	45	60	75
Production overheads ₹/u (Traditional method)	44	58	73
Total Production Cost ₹/u	164	178	208
No. of units produced	12000	18000	24000
Purchase requisitions (nos.)	300	300	400
No. of production runs	800	1000	1200

Marks

Since most of the overheads relate to production runs, the management wants to use the ABC System, for which the following information is given :

Activity	Cost Driver	Overhead Amount (₹)
Stores Receiving	Purchase Requisitions	4,50,000
All other production overheads	Production Runs	Balance Amount

You are required to find out the production overhead cost per unit of only Z under the ABC System.

(b) M has a plan to invest ₹ 2,40,000 in three different types of funds- Debt (A), Debt + equity (B) and Equity (C). A offers a return of 4% p.a. and has a low risk. Fund B offers a return of 6% p.a. and has a moderate risk. Fund C offers a return of 10% p.a. but has a high risk due to volatility in the stock market. To be on the safe side, M decided to invest not more than 15 percent of the investment amount in C and atleast twice as much in A as in B. The rates of return will continue up to the end of the year. **5**

Formulate the above as a linear program to maximise annual return. (no need to solve).

Will an average annual return of 6% be feasible ?

(c) The following information is provided for October 2019 : **5**

Product	Budgeted		Cost ₹/u		Actual	
	Sales Units	Selling Price ₹/u	Standard	Actual	Units Sold	Sales Value (₹)
P	11000	20	16	17	15,000	3,30,000
Q	9000	25	14	11	12,000	2,40,000

Compute :

(i) Product wise sales margin mix variance.

(ii) Product wise sales margin price variance.

Marks

(d) ABC Ltd. has to decide whether to accept a special order or not for a certain product P using spare capacity in respect of which the following information is given : 5

Materials	Requirements	In Stock	Book Value	Replacement Cost per kg.	Realisable value per kg.
Material A (in use for production)	500 kg	250 kg	₹ 1250	₹ 7	₹ 3
Material B (not currently in use)	1500 kg	700 kg	₹ 1400	₹ 3	₹ 1.50

Fixed overhead is absorbed of ₹ 10 per unit.

In the given decision context, identify the following :

Sl. No.	Item	Value (₹)
I	II	III
(i)	Relevant cost of 500 kg of A	
(ii)	Relevant cost of 1500 kg of B	
(iii)	Relevant fixed overheads	
(iv)	Opportunity cost of 800 kg of B not in stock	
(v)	Relevant cost of 20 kg of A damaged in stock	

(Present only columns I & III in your answers).

Marks

2. (a) A school wants to purchase four identical hand-crafted gifts from Sunbeam Co. to be given to the Chief Guest and other dignitaries during a function. Each gift can be crafted by a single labourer. **8**

Sunbeam will start the work on the next day of the order. The following information is estimated for the first unit of the gift :

Particulars	**₹/unit**
Direct variable costs (excluding labour)	3500
Direct labour (30 hours @ ₹ 60 per hour)	1800

Other Information :

- 80% learning curve ratio is applicable only to direct labour.
- Each day consists of eight working hours per labourer; No overtime is allowed.
- Desired mark-up is 20% of all variable costs.

Compute the minimum amount that Sunbeam can quote for 4 units of the gifts, if the school will take delivery of the gifts on

(i) the 5th day of the order. (i.e. 4 days from the commencement of work).

(ii) the 7th day of the order.

(iii) the 11th day of the order.

(b) Costs (in ₹ Lakhs) of repairing roads R_1, R_2, R_3 and R_4 by contractors are tabulated below : **8**

Contractor / Road	**R_1**	**R_2**	**R_3**	**R_4**
C_1	5	10	14	11
C_2	6	15	15	14
C_3	7	15	16	15
C_4	8	9	13	14
C_5	9	12	16	10

Marks

For strategic reasons, C_1 has to be given R_1. The management feels that C_5 will take unacceptably longer time for Roads R_1, R_2 and R_4. Therefore either C_5 can be given R_3 or must be eliminated. Can the management be convinced that C_5 can be given R_3 and yet be within the optimal assignment ? Substantiate and find the optimal assignment(s) using the assignment algorithm.

3. (a) TF is engaged in the production of four types of products, A, B, C and D. The following information is available for November 2019 : **8**

Products	**A**	**B**	**C**	**D**
Contribution (per unit) ₹	9,000	9,600	7,000	4,800
Machine Hours required per unit of production :				
Machine P	9	10	8	4
Machine Q	10	11	12	6
Machine R	12	12	10	8
Estimated Demand (Units)	600	600	600	600

Machine capacity is limited to 21,600 hours for each machine. Fixed costs are ₹ 75 lakhs for the month.

(i) Identify the bottleneck activity and allocate the machine time on the basis of bottleneck activity and compute the optimum profits.

(ii) If the bottleneck resource identified above is available on hire at ₹ 500/hour for any duration required, would it create an improved optimum profit ? Present relevant calculations supporting your answer.

Marks

(b) ABC Co. is selling its products to customers A, B and C. The following information is given for the year 2018-19. 8

	Customer A	Customer B	Customer C
Sales in Lakhs (₹)	15.90	20.0	15.0
Number of deliveries (including rush deliveries)	100	40	50
Number of orders	120	50	60
Average number of hours per delivery (for verification of goods before loading for delivery)	1	1.20	1.30
Number of rush deliveries	2	1	2
Sales commission (% to sales)	4	5	5

Normal delivery cost is ₹ 1250 per delivery. Order processing cost is ₹ 1,84,000. Verification cost of goods before loading is ₹ 5,32,500. Rush delivery cost is 180% of normal delivery cost. Variable cost is 75 percent of sales.

(i) Present a customer wise profitability statement.

(ii) An online selling company (OSC) offers to bear the order processing and verification costs, arrange its own pickup and deliveries based on orders received. But OSC wants 8% commission on sales. Should ABC discontinue the least profitable customer in favour of OSC ? Support your decision with relevant figures. How do you think ABC should evaluate the proposal ?

Marks

4. (a) HJ is a hotel in the neighbourhood of an office complex. It offers two types of rooms-single and double, with facilities of room service, complementary breakfast, TV, etc. However, since its location lacks visibility, its business had not picked up after construction. It has 40 single and 10 double rooms, allotted for single and double occupancy respectively. **10**

HJ has entered into an arrangement with an online booking agency (OBA) whereby hotel rooms are booked in advance through OBA. HJ has to pay 30% of the room rent billing as commission to OBA. There are frequent cancellations of bookings and therefore OBA has agreed to pay 10% of the billing to HJ. HJ agrees not to have any direct booking at the hotel. The complementary breakfast costs HJ ₹ 120 per occupant.

HJ charges customers per night at ₹ 1800 per single room and ₹ 2200 per double room.

During the year, 150 days will have 40% occupancy and the remaining 215 days will have 90% occupancy levels. Assume occupancy as per proportion of room types. Fixed expenses amount to ₹ 122,40,000 during the year.

(i) Calculate the break-even number of room nights giving the break-up of single and double rooms.

(ii) What will be the profits earned during the year ?

(b) A shop sells curds in 1 kg packets. The cost and selling price per packet are ₹ 40 and ₹ 50 respectively. The shelf life of the curd is 2 days. If it is not sold by the end of the second day, it has to be discarded. Daily demand based on past experience is as under : **6**

Daily Demand	0	40	45	55	70	80
Probability	0.02	0.15	0.25	?	0.23	0.05

Consider the following sequence of Random Numbers :

53, 71, 11, 13, 84

Marks

(i) 50 packets of curd are purchased every morning and there is an opening stock of 9 packets (purchased the previous morning as on day 1). If the daily excess demand is not met, such short quantity is to be treated as loss of profit. Assume LIFO basis (Last in First Out basis - where the fresh curd is sold first).

Find, on the basis of simulation, the position of closing stock as at the end of the 4th day and the profit or loss of only Day 4.

5. (a) A manufacturing company has the following budget for two different levels of activity : **10**

Direct labour hours

	Level of activity	
No. of hours	40,000	80,000
Direct Material cost (₹)	2,40,000	4,80,000
Direct Labour cost (₹)	1,60,000	3,20,000

Machine hours

	Level of activity	
No. of hours	1,50,000	1,80,000
Maintaining equipment cost (₹)	2,85,000	3,33,000
Machining cost (₹)	1,15,000	1,36,000

Material Moves

	Level of activity	
No. of Moves	16,000	32,000
Material handling cost (₹)	1,30,000	2,30,000

Number of Batches Inspected

	Level of activity	
No. of batches	80	160
Inspection cost (₹)	80,000	1,40,000

Marks

During the period, the company worked a total of 60,000 direct labour hours, used 1,60,000 machine hours, made 22,000 moves, and performed 100 batches of inspection. The following actual costs were incurred :

	₹
Direct Material	3,40,000
Direct labour	2,62,000
Maintenance	2,96,000
Machining	1,25,000
Material handling	1,70,000
Inspections	85,000

The company applies overhead rates based on the given activities. The second level of activity is the practical level.

Consider the overheads as semi-variable in relation to the activity driver and hence arrive at the rates to compute the flexible budget figures. Compare these with the actual figures. Do you feel that overheads are being incurred efficiently ? Suggest a measure for increasing profitability based on your findings.

(b) (i) Is it possible to have a high efficiency ratio while having a low activity ratio ? Why ? Explain. 6

(ii) In response to a falling demand condition of a perishable product, a factory reported a lower calendar ratio. Is this an appropriate decision by the Management ? Explain.

Marks

6. (a) A company has two manufacturing divisions, A and B, that operate as independent profit centres. Division A produces two components 'XX' and 'YY' using the same labour force and has a capacity of 42,000 labour hours per annum. 12

The product cost data per unit is as under :

	Component XX (₹)	Component YY (₹)
Direct material per unit	15	6
Direct labour and variable overheads @ ₹ 25/labour hour	75	25

Division A has only one permanent customer 'P' for purchase of 10,000 units of component XX per annum at a selling price of ₹ 240 per unit. The balance capacity is used for the production of component YY, having unlimited demand at a price of ₹ 55 per unit.

Division B assembles ZZ by using an imported component. Any quantity can be imported. The product cost data per unit is as under :

	₹
Imported component	240
Direct Material (in addition to the imported component)	40
Direct labour and variable overheads @ ₹ 10/labour hour	50
Selling price	450

Instead of each imported component, one unit of XX can be used with slight modification, but this requires two extra hours per unit of ZZ in Division B. The demand for ZZ is 5000 units per annum. B has 33600 labour hours available.

Marks

If B is made to buy all its requirements from A, and assuming that 'P' will accept partial supplies,

(i) What would be the maximum transfer price per unit that B will agree to ?

(ii) What would be A's production strategy ? What will be the minimum transfer price per unit that A will agree to ?

Independent of the above, restriction on B what is the best strategy for the company and the optimum contribution ?

(b) State with a brief reason, the appropriate pricing policy that should be adopted in the following situations. (Do not copy the situation into your answer books) 4

(i) A health centre doing routine health check-up with normal facilities.

(ii) A newly formed company is trying to build a unique product that it may patent. Some of the product's components, designed to specifications are outsourced to A. The pricing that should be followed by A.

7. Answer **any four** out of the following **five** questions :

(a) Mr. Roy, newly appointed as 'Head-Service Quality' of TS Ltd., has been asked to address the following complaints from customers. He would start solving issues using Pareto Analysis (80/20 Rule) in the first quarter. 4

Complaint Categories	No. of Complaints
Customer Service	218
Overcharging/Wrong Billing	372
Non-posting of payments to account	97
Transfer of connections	21
Faults in Line	436
Connection Installations	65
Late attending of complaints	246
Activation of wrong plans	135

Substantiate with relevant figures whether the complaint 'Activation of wrong plans' will be addressed in the first quarter or not.

Marks

(b) If A is an activity with successor 'S', identify the type of float in the following cases : 4

I	II	III
Sl. No.	Description	Float Type
(i)	Latest finish time of A minus earliest start time of S.	
(ii)	Latest start time minus earliest start time of A.	
(iii)	Value by which A can be delayed beyond its earliest starting point without affecting the earliest start time of S.	
(iv)	Amount of time by which the actual completion of A can exceed its earliest expected completion time without causing any delay in the project duration.	

(Present only columns I and III in your answers).

(c) XYZ Co. uses standard absorption costing system. For a certain period, budgeted Fixed Overheads were ₹ 4,20,000; Budgeted production was 30,000 units; Fixed Overhead cost was over absorbed by ₹ 16,000 and Fixed Overhead Expenditure variance was ₹ 30,000 (Favourable). What was the actual production ? 4

(d) State whether and how the following situations are possible or not on introducing a JIT system of production in an automobile factory. 4

(i) Increased cost of inspection at the production shop floor where suppliers' components have been delivered.

(ii) Increase in raw materials (purchase) cost.

(iii) Reduction in the variety of output produced.

(iv) Increase in computerisation cost.

Without copying the situation, present your answers in the following format :

Sl. No.	Possibility Yes/No	Reason

(e) When we are attempting an initial solution to a balanced m × n transportation problem for minimising cost by Vogel's method, in the first allocation, suppose that total demand and total supply quantities are the same, will the initial solution be degenerate ? Why ? 4