

MOCK TEST PAPER – 2
FINAL (OLD) COURSE: GROUP – II
PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question No. 1 is compulsory
*Answer any **five** questions from the remaining **six** questions*

Time Allowed – 3 Hours

Maximum Marks – 100

1. (a) Star Limited operates its plant at normal capacity, it produces 2,00,000 units from the plant 'M'. The unit cost of manufacturing at normal capacity is as under:

	Rs.
Direct material	65
Direct labour	30
Variable overhead	33
Fixed overhead	<u>7</u>
	135

Direct labour cost represents the compensation to highly-skilled workers, who are permanent employees of the company. The company cannot afford to lose them. One labour hour is required to complete one unit of the product.

The company sells its product for Rs. 200 per unit with variable selling expenses of Rs. 16 per unit. The company estimates that due to economic down turn, it will not be able to operate the plant at the normal capacity, at least during the next year. It is evaluating the feasibility of shutting down the plant temporarily for one year.

If it shuts down the plant, the fixed manufacturing overhead will be reduced to Rs. 1,25,000. The overhead costs are incurred at a uniform rate throughout the year. It is also estimated that the additional cost of shutting down will be Rs. 50,000 and the cost of re-opening will be Rs. 1,00,000.

Required

Calculate the minimum level of production at which it will be economically beneficial to continue to operate the plant next year if 50% of the labour hours can be utilized in another activity, which is expected to contribute at the rate of Rs. 40 per labour hour. The additional activity will relate to a job which will be off-loaded by a sister company only if the company decides to shut down the plant.

(Assume that the cost structure will remain unchanged next year. Ignore income tax and time value of money). **(5 Marks)**

- (b) A company can produce any of its 4 products, P, Q, R and S. Only one product can be produced in a production period and this has to be determined at the beginning of the production run. The production capacity is 1,000 hours. Whatever is produced has to be sold and there is no inventory build-up to be considered beyond the production period. The following information is given:

	P	Q	R	S
Selling Price (Rs./unit)	40	50	60	70
Variable Cost (Rs./unit)	30	20	20	30
No. of units that can be sold	1,000	600	900	600
No. of production hours required per unit of product.	1 hour	1 hour and 15 minutes	1 hour and 15 minutes	2 hours

What are the opportunity costs of P, Q, R and S?

(5 Marks)

(c) S Ltd. prepared a draft budget for the next year as follows:

Quantity – 10,000 units

	Rs.
Selling Price per unit	60
Variable Cost per unit	
Direct Materials	16
Direct Labour (2 hrs × Rs.6)	12
Variable Overheads (2 hrs × Rs.1)	2
Contribution per unit	30
Total Budgeted Contribution	3,00,000
Total Budgeted Fixed Overheads	2,80,000
Total Budgeted Profit	20,000

The board of directors are not satisfied with this draft budget and suggested the following changes for the better profit:

- (i) The budgeted profit is Rs. 50,000,
- (ii) The company should spend Rs. 57,000 on advertisement and the target sales price up to 64 per unit.
- (iii) It is expected that the sales volume will also rise, inspite of the price rise, to 12,000 units.

In order to achieve the extra production capacity, however, the work force must be able to reduce the time taken to make each unit of the product. It is proposed to offer a pay and productivity deal in which the wages rate per hour is increased to Rs. 8. The hourly rate for variable overheads will be unaffected.

Required

Calculate the target labour time require to achieve the target profit.

(5 Marks)

(d) An investor is interested in investing Rs. 15,00,000 in a portfolio of investments. The investment choices and expected rates of return on each one of them are:

Investment	Projected Rate of Return
Mutual Fund 'AB'	15%
Mutual Fund 'CD'	9%

Money Market Fund	8%
Government Bonds	8.75%
Shares 'E'	17%
Share 'F'	18%

The investor wants at least 40% of his investment in Government Bonds. Because of the higher perceived risk of the two shares, he has specified that the combined investment in these two shares not to exceed Rs. 2,60,000. The investor has also specified that at least 25% of the investment should be in the money market fund and that the amount of money invested in shares should not exceed the amount invested in Mutual Funds. His final investment condition is that the amount invested in mutual fund 'AB' should be no more than the amount invested in mutual fund 'CD'. The problem is to decide the amount of money to invest in each alternative so as to obtain the highest annual total return.

Required

Formulate the above as a linear programming problem.

(5 Marks)

2. (a) GAL International Ltd. has developed a new product 'α³' which is about to be launched into the market. Company has spent Rs. 30,00,000 on R&D of product 'α³'. It has also bought a machine to produce the product 'α³' costing Rs.11,25,000 with a capacity of producing 1,100 units per week. Machine has no residual value.

The company has decided to charge price that will change with the cumulative numbers of units sold:

Cumulative Sales (units)	Selling Price Rs. per unit
0 to 2,200	750
2,201 to 7,700	600
7,701 to 15,950	525
15,951 to 59,950	450
59,951 and above	300

Based on these selling prices, it is expected that sales demand will be as shown below:

Weeks	Sales Demand per week (units)
1-10	220
11-20	550
21-30	825
31-70	1,100
71-80	880
81-90	660
91-100	440
101-110	220
Thereafter	NIL

Unit variable costs are expected to be as follows:

Rs. per unit	
First 2,200 units	375
Next 13,750 units	300
Next 22,000 units	225
Next 22,000 units	188
Thereafter	225

GAL uses just-in-time production system. Following is the total contribution statement of the product 'α³' for its Introduction and Growth phase:

Weeks	Introduction	Growth	
	1 - 10	11 - 30	
Number of units Produced and Sold	2,200	5,500	8,250
Selling Price per unit (Rs.)	750	600	525
Variable Cost per unit (Rs.)	375	300	300
Contribution per unit (Rs.)	375	300	225
Total Contribution (Rs.)	8,25,000	16,50,000	18,56,250

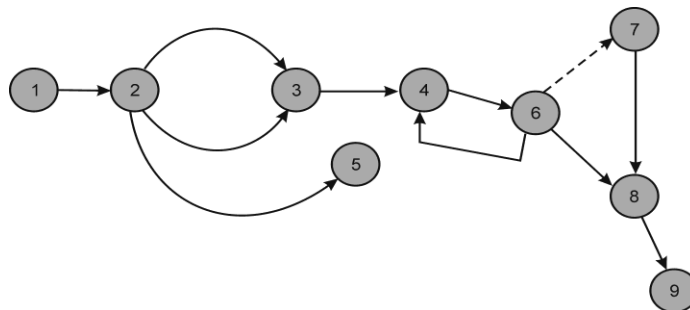
Required

- (i) Prepare the total contribution statement for each of the remaining two phases of the product's life cycle.
- (ii) Discuss Pricing Strategy of the product 'α³'.
- (iii) Find possible reasons for the changes in cost during the life cycle of the product 'α³'.

Note: Ignore the time value of money.

(12 Marks)

- (b) Point out the errors in the network given below, going by the usual conventions while drawing a network to use CPM.



(4 Marks)

- 3. (a) A salesman has to visit five cities. He wishes to start from a particular city, visit each city once and then return to his starting point. Cost (in Rs. '000) of travelling from one city to another is given below:

	P	Q	R	S	T
P	-	5	14	20	2
Q	17	-	8	23	5

R	23	20	-	11	20
S	35	11	17	-	14
T	2	8	5	23	-

Required

Find out the 'Least Cost Route'.

(10 Marks)

- (b) X Ltd. supplies spare parts to an air craft company Y Ltd. The production capacity of X Ltd. facilitates production of any one spare part for a particular period of time. The following are the cost and other information for the production of the two different spare parts A and B:

Per unit	Part A	Part B
Alloy usage.....	1.6 kgs.	1.6 kgs.
Machine Time: Machine A.....	0.6 hrs.	0.25 hrs.
Machine Time: Machine B.....	0.5 hrs.	0.55 hrs.
Target Price (Rs.).....	145	115
Total hours available:.....	Machine A Machine B	4,000 hours 4,500 hours
Alloy available is 13,000 kgs. @ Rs. 12.50 per kg.		
Variable overheads per machine hours:.....	Machine A: Machine B:	Rs. 80 Rs. 100

Required

- (i) Identify the spare part which will optimize contribution at the offered price.
- (ii) If Y Ltd. reduces target price by 10% and offers Rs. 60 per hour of unutilized machine hour, what will be the total contribution from the spare part identified above? **(6 Marks)**
4. (a) The standard cost of a certain chemical mixture is as under:
- 40% of Material P @ Rs. 30 per kg
- 60% of Material Q @ Rs. 40 per kg

A standard loss of 10% of input is expected in production. The following actual cost data is given for the period.

- 350 kg Material – P at a cost of Rs. 25
- 400 kg Material – Q at a cost of Rs. 45
- Actual weight produced is 630 kg.

Required

Calculate the following variances *raw material wise* and indicate whether they are favorable (F) or adverse (A):

- (i) Cost variance
- (ii) Price variance
- (iii) Mix variance
- (iv) Yield variance

(10 Marks)

- (b) In a 3 x 4 transportation problem for minimizing costs, will the R_2C_1 cell (at the intersection of the 2nd row and 1st column) always figure in the initial solution by the North West Corner Rule? Why?

(6 Marks)

5. (a) ABC Corporation manufactures and sells two products RB and RD. Three types of materials, A, B and C are required for producing these products. Projected information for 2018-19 is given below:

Product	Projected sales for 2018-19	Inventory (in units)		Direct Labour Requirement
		Units	On 1-4-2018	On 31-3-2019
RB	75,000	25,000	31,250	4
RD	50,000	10,000	11,250	6

Raw material stock and usage are as follows:

Direct Material	Requirement per unit		Inventory on 1-4-2018	Inventory on 31-3-2019
	RB	RD		
A	5.00 kg	5.00 kg.	40,000 kg	45,000 kg
B	2.50 kg	3.00 kg	36,250 kg	40,000 kg
C	0	1.00 kg	7,500 kg	8,750 kg

Required

Prepare the following for 2018-19:

- Production budget (in units)
- Direct material purchase budget in quantities for A, B and C.
- After (i) and (ii), you are told that only 6,00,000 labour hours will be available for production. If there is no requirement to hold the stated level of finished goods closing inventory, what would be the principal budget factor? Substantiate your view with appropriate figures.

(8 Marks)

- (b) State the type of cost in the following cases:

- Cost associated with the acquisition and conversion of material into finished product.
- Cost arising from a prior decision which cannot be changed in the short run.
- Increase in cost resulting from selection of one alternative instead of another.
- Rent paid for a factory building which is temporarily closed.

(4 Marks)

- (c) A company manufactures two products X and Y. Product X requires 8 hours to produce while Y requires 12 hours. In April, 2019, of 22 effective working days of 8 hours a day, 1,200 units of X and 800 units of Y were produced. The company employs 100 workers in production department to produce X and Y. The budgeted hours are 1,86,000 for the year.

Required

Calculate Capacity, Activity and Efficiency ratio and establish their relationship.

(4 Marks)

6. (a) The Gifts Company makes mementos for offering chief guests and other dignitaries at functions. A customer wants 4 identical pieces of hand-crafted gifts for 4 dignitaries invited to its function. For this product, the Gifts Company estimates the following costs for the 1st unit of the product.

Particulars of Costs	Rs. / unit
Direct Variable Costs (excluding labour)	2,000
Direct Labour (20 hours @ Rs. 50 hour)	1,000

90 % learning curve ratio is applicable and one labourer works for one customer's order.

Required

- (i) What is the price per piece to be quoted for this customer if the targeted contribution is Rs.1,500 per unit?
- (ii) If 4 different labourers made the 4 products simultaneously to ensure faster delivery to the customer, can the price at (i) above be quoted? Why? **(4 Marks)**
- (b) C Ltd. Makes a single product with the following details:

Description	Current Situation	Proposed Change
Selling Price (Rs./unit)	10	
Direct Costs (Rs./unit)	5	
Present number of setups per production period, (before each production run, setup is done)	42	
Cost per set up (Rs.)	450	Decrease by Rs. 90
Production units per run	960	1,008
Engineering hours for production period	500	422
Cost per engineering hour (Rs.)	10	

The company has begun Activity Based Costing of fixed costs and has presently identified two cost drivers, viz. production runs and engineering hours. Of the total fixed costs presently at Rs. 96,000, after the above, Rs. 72,100 remains to be analyzed. There are changes as proposed above for the next production period for the same volume of output.

Required

- (i) How many units and in how many production runs should C Ltd. produce in the changed scenario in order to break-even?
- (ii) Should C Ltd. continue to break up the remaining fixed costs into activity based costs? Why? **(8 Marks)**
- (c) U Ltd. uses a standard absorption costing system. The following details have been extracted from its budget for year 2018-19.

Fixed Overhead Cost.....Rs. 7,20,000

Production.....36,000 units

In 2018-19 the Fixed Overhead Cost was over-absorbed by Rs.3,200 and the Fixed Overhead Expenditure Variance was Rs.20,000(F).

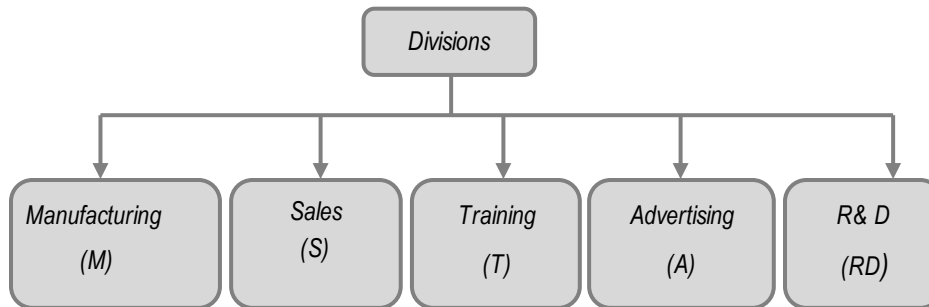
Required

What was the actual number of units produced in 2018-19? **(4 Marks)**

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

- (a) What are the critical success factors for the implementation of a "Total Quality Management" programme? **(4 Marks)**

- (b) Metro Communication Limited is a state-owned large public company in the telecommunications sector. One of its main planning and control tools is the preparation and use of traditional annual budgets. Its divisional structure is as under:



Division T, A and RD incur substantial amount on discretionary expenses.

Required

Identify the possibilities of introducing a Zero Based Budgeting system for Division T, A and RD.

(4 Marks)

- (c) What should be the basis of transfer pricing, if unit variable cost and unit selling price are not constant? **(4 Marks)**
- (d) What do you mean by DPP? What are its benefits? **(4 Marks)**
- (e) A refreshment centre in a railway station has two counters - (i) self-service (opted by 60 % of the customers) and (ii) attended service (opted by 40 % of the customers). Both counters can serve one person at a time. The arrival rate of customers is given by the following probability distribution:

No. of Arrivals	1	3	4	0	2
Probability	0.10	0.30	0.05	0.20	0.35

Required

Formulate the associated interval of 2 digit random numbers for generating

- (i) the type of service and
 (ii) the arrival rate

(4 Marks)