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1. Answer any **five** of the following :**[5x2=10 marks]****(i)** Define the following :

- (a) Imputed cost
- (b) Capitalised cost.

(ii) Calculate efficiency, and activity ratio from the following data :

Capacity ratio	=	75%
Budgeted output	=	6000 units
Actual output	=	5000 units
Standard Time per unit	=	4 hours

(iii) List the Financial expenses which are not included in cost,**(iv)** Mention the main advantage of cost plus contracts.**(v)** A Company sells two products, J and K. The sales mix is 4 units of J and 3 units of K. The contribution margins per unit are Rs. 40 for J and Rs. 20 for K. Fixed costs are Rs. 6,16,000 per month. Compute the break-even point.**(vi)** When is the reconciliation statement of Cost and Financial accounts not required ?

Ans. 1. (i) (a) Imputed costs- These costs are notional costs which do not involve any cash outlay. Interest on capital, the payment for which is not actually made, is an example of imputed cost, These costs are similar to opportunity costs.

Ans. 1. (i) (b) Capitalised Cost : The Cost which generates enduring benefits and helps in revenue generation over more than one accounting period, is called Capitalised Cost. These Costs are written off in the calculation of cost of a product or service over several accounting periods.

$$\text{Ans (1) (ii) Capacity ratio} = \frac{\text{ATw}}{\text{BT}}$$

$$75\% = \frac{\text{ATw}}{6000 \times 4}$$

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$$\therefore \text{ATw} = 24000 \times 75\% = 18000 \text{ hrs}$$

$$\text{Efficiency ratio} = \frac{\text{ST}}{\text{ATw}} = \frac{5000 \times 4}{18000} \times 100 = 111.11\%$$

$$\text{Activity ratio} = \frac{\text{ST}}{\text{BT}} = \frac{20000}{24000} \times 100 = 83.33\%$$

Here ST = Standard time for actual output
 ATw = Actual time worked
 BT = Budgeted time.

Ans. 1 (iii) List of Financial Expenses which are not included in Cost Records -

- (a) Profit/Loss on sale of fixed assets, investments.
- (b) Preliminary Expenses written off.
- (c) Goodwill written off etc.
- (d) Provision for taxation.
- (e) Appropriation of profit - dividend transfer to reserve etc.

Ans. 1 (iv) Advantages of Cost-plus Contracts : Such contracts have number of advantages for the contractor and the contractee.

Advantages to Contractor

- (i) All costs are fully covered. There is no risk of loss due to price changes and under estimation of costs,
- (ii) There are no bargaining hassles.
- (iii) There is an automatic escalation clause so that cost increases are recovered,
- (iv) Profit is known in advance,
- (v) Work of preparing tenders and quotations gets simplified.

Advantages of Contractee

- (i) Contractee pays only the reasonable price based on actual cost incurred,
- (ii) No bargaining hassles,
- (iii) Contractee gets the benefit of fall in price of materials and wage rates, etc.

Ans. 1. (v) Break up point in case of multi product firm

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Overall Contribution per unit}} = \frac{616000}{31.428571/- \text{ (W.N.1)}} = 19600 \text{ Units per month}$$

W.N. (1)

Overall contribution per unit

Product	Contribution per unit	Sales Mix	Contribution X Sales Mix
J	40/-	4 units	160
K	20/-	3 units	60
		7	220

$$\begin{aligned} \text{Overall Contribution per unit} &= \frac{\Sigma \text{Contribution} \times \text{Sales Mix}}{\Sigma \text{Sales Mix}} \\ &= \frac{220}{7} = 31.428571/- \end{aligned}$$

Ans.1 (vi) If the enterprises is maintaining integrated system of accounting, then reconciliation statement of cost and financial accounts are not required. In case of integrated system of accounting, cost and financial accounts are kept in the same set of books; therefore there is no need to reconcile them.

QN 2. Mega Company has just completed its first year of operations. The unit costs on a normal costing basis are as under :

	Rs.	
Direct material 4 kg @ Rs. 4	= 16.00	
Direct labour 3 hrs @ Rs. 18	= 54.00	WWW.GNTMASTERMINDS.COM
Variable overhead 3 hrs @ Rs. 4	= 12.00	
Fixed overhead 3 hrs @ Rs. 6	= 18.00	
	<u>100.00</u>	

Selling and administrative costs :

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Variable	Rs. 20 per unit
Fixed	Rs. 7,60,000

During the year the company has the following activity :

Units produced	=	24,000
Units sold	=	21,500
Unit selling price	=	Rs.168
Direct labour hours worked	=	72,000

Actual fixed overhead was Rs. 48,000 less than the budgeted fixed overhead. Budgeted variable overhead was Rs. 20,000 less than the actual variable overhead. The company used an expected actual activity level of 72,000 direct labour hours to compute the predetermine overhead rates.

Required :

(i) Compute the unit cost and total income under :

- (a) Absorption costing
- (b) Marginal costing.

(ii) Under or over absorption of overhead.

(iii) Reconcile the difference between the total income under absorption and marginal costing. [15 marks]

Ans 2. (i)

Profit & Loss A/c under absorption costing

To D. Material (24000 units @ 16/- per unit)	384000	By Sales (215000 units @ 168/- p.u.)	3612000
" D. Labour (24000 units @ 54/- per unit)	1296000	" Over recovery of fixed overhead	48000
" Variable overhead absorbed	288000	" <u>Closing Stock</u> (100/- x 2500 units)	250000
" Fixed overhead absorbed	432000		
" <u>Selling & Admn. Overhead</u> Variable	430000		
(21500 units @ 20/- p.u.)			
Fixed	760000		
" Under recovery of variable overhead	20000		
" Net Income	300000		
	3910000		3910000

Profit & Loss A/c under marginal costing

To D. Material	384000	By Sales	3612000
" D. Labour	1296000	" Closing Stock	207083
" Variable overhead (Actual)	308000	(82.8333/- x 2500 units)	
" Fixed overhead (Actual)	384000		
" <u>Selling & Admn. OH</u> Variable	430000		
Fixed	760000		
" Net Income	257083		
	3819083		3819083

Budgeted Fixed overhead	=	72000 labours hours x 6/- per hour = 432000/-
Actual Fixed overhead	=	432000/- - 48000 /- = 383000/-
Fixed overhead absorbed	=	units produced x fixed oh per unit
	=	24000 x 18/- = 432000 /-
Budgeted variable overhead	=	72000 labour hours @ 4/- per hour = 288000 /-
Actual variable overhead	=	288000/- + 20000 /- = 308000 /-

<u>Cost per unit under absorption costing</u>	<u>Rs.</u>
D. Material	16.00
D. Labour	54.00
Variable Overhead	12.00
Fixed Overhead	18.00
Total Cost	100.00

<u>Cost per unit under Marginal costing</u>	<u>Rs.</u>
D. Material	16.00
D. Labour	54.00
Variable overhead	12.83
308000/- ----- 2400 units	
Total Cost	82.83

(ii) Under or over absorption of overhead

(a) Variable Overhead (Actual)	308000/-
" " (Absorbed)	<u>288000/-</u>
Under recovery	= <u>20000/-</u>
(b) Fixed overhead (Actual)	= 384000/-
" " (Absorbed)	= <u>432000/-</u>
Over recovery	= <u>48000/-</u>

Ans. 2 (iii) Reconciliation statement between profit under absorption costing & marginal costing

Profit as per marginal costing	257083 /-
Add : under valuation of Clo. Stock in marginal costing	42917/-
Profit as per absorption costing	<u>300000 /-</u>

3. (a) XP Ltd. furnishes you the following information relating to process II.

- (i) Opening work-in-progress — NIL
- (ii) Units introduced 42,000 units @ Rs. 12
- (iii) Expenses debited to the process :

	Rs.
Direct material	61,530
Labour	88,820
Overheads	1,76,400

- (iv) Normal loss in the process = 2% of input.
- (v) Closing work-in-progress — 1200 units
Degree of completion — Materials 100%
 Labour 50%
 Overhead 40%
- (vi) Finished output — 39500 units
- (vii) Degree of completion of abnormal loss :
Material 100%
Labour 80%
Overhead 60%

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(viii) Units scrapped as normal loss were sold at Rs. 4.50 per unit,

(ix) All the units of abnormal loss were sold at Rs. 9 per unit.

Prepare :

(a) Statement of equivalent production.

(b) Statement showing the cost of finished goods, abnormal loss and closing work-in-progress.

(c) Process II account and abnormal loss account.

[8 marks]**(b)** The following information is available from the cost records of Vatika & Co. For the month of August, 2009:

Material purchased 24,000 kg Rs. 1,05,600

Material consumed 22,800 kg

Actual wages paid for 5,940 hours Rs. 29,700

Unit produced 2160 units.

Standard rates and prices are :

Direct material rate is Rs. 4.00 per unit

Direct labour rate is Rs. 4.00 per hour

Standard input is 10 kg. for one unit.

Standard requirement is 2.5 hours per unit.

Calculate all material and labour variances for the month of August-2009.

[8 marks]**Ans. (3) (a)** Statement showing equivalent production

Particulars	Total	Material		Labour		Overhead	
		%	Qty	%	Qty	%	Qty
(i) Opening WIP	NIL	--	--	--	--	--	--
(ii) Units in produced, completed & transferred process III	39500	100%	39500	100%	39500	100%	39500
(iii) Normal Loss	840	--	--	--	--	--	--
(iv) Abnormal Loss	460	100%	460	80%	368	60%	276
(v) Closing WIP	1200	100%	1200	50%	600	40%	480
Equivalent Production	42000		41160		40468		40256

Statement showing cost per unit of each element of material, labour & overhead

	Material	Labour	Overhead
Total Material Cost including additional material (Rs.)	565530	88820	176400
Less : Scrap value of Normal Loss [840 units @ 4.5/- per unit]	3780	--	--
	561750	88820	176400
Equivalent Production	41160	40468	40256
Cost per unit	13.647959/-	2.1948205/-	4.3819554/-

Statement showing cost of finished goods, abnormal loss closing WIP

Particulars	Finished Goods	Abnormal Loss	Closing WIP
D. Material	539094/- (39500 x 13.647959)	6278/- (460 x 13.6479)	16378/- (1200 x 13.6479/-)
D. Labour	86695/- (39500 x 2.1948)	807/- (368 x 2.1948/-)	1318/- (600 x 2.1948/-)
Overhead	173087/- (39500 x 4.3819/-)	1210/- (276 x 4.3819/-)	2103/- (480 x 4.3819/-)
	798876/-	8295/-	19799/-

Process II account

Particulars	Qty	Amount	Particulars	Qty	Amount
To D. Material	42000	504000	By Normal Loss	840	3780
" Other Material	--	61530	" Abnormal Loss	460	8295
" D. Labour	--	88820	" Finished Goods a/c	39500	798876

" Overhead	--	176400	" Closing WIP	1200	19799
	42000	830750		42000	830750

Abnormal Loss account

To Process II a/c	8295	By Cash a/c (460 units @ 9/- p.u.)	4140
		" Profit & Loss a/c (B/F)	4155
	-----		-----
	8295		8295
	-----		-----

Ans. 3 (b) Material Variances (Assuming Partial plan)

SP x SQ	SP x SM	SP x AQ used	AP x AQ used
4 x (10 x 2160) = 86400/-	4 x 22800 = 91200/-	4 x 22800 = 91200/-	4.4 x 22800 = 100320

SP = Standard Price of material per kg = 4/-

SQ = Standard Quantity for actual output = 10 kg x 2160 units = 21600 k.g.

AQ used = Actual Quantity used = 22800 k.g.

Rs. 105600

AP = Actual Price of Material per K.g. = -----

24000 k.g.

= 4.4/- per k.g.

SM=Total Actual quantity used in standard mix ratio= 22800 k.g. (because there is only one material given in the question)

Material Cost variance = (SP x SQ) - (AP x AQ used) = 86400/- - 100320/- = 13920 /- (A)

Material Price variance = (SP x AQ used) - (AP x AQ used) = 91200/- - 100320/- = 9120/- (A)

Material usage variance = (SP x SQ) - (SP x AQ used) = 86400 - 91200 = 4800/- (A)

Material Mix Variance = (SP x SM) - (SP x AQ used) = 91200 - 91200 = NIL

Material yield variance = (SP x SQ) - (SP x SM) = 86400 - 91200 = 4800 /- (A)

Labour variance

SR X ST	SR X SM	SR X ATW	SR X ATP	AR X ATP
4 x (2.5 x 2160)	4 x 5940	4 x 5940	4 x 5940	29700/-
= 21600/-	= 23760/-	= 23760/-	= 23760/-	

Here,

SR = Standard rate of labour per hour

AT = Actual rate of labour per hour

ST = Standard time for actual output **WWW.GNTMASTERMINDS.COM**

ATw = Actual time worked.

ATp = Actual time paid for

SM = Total Actual time worked in standard mix ratio.

Note :- (1) It is assumed that ATp = ATw

(2) In this question only one type of labour is there therefore SM = ATw.

SR = 4/- per hour

ST = 2.5 hours per unit x 2160 units = 5400 hours

ATp = ATw = SM = 5940 hours

Labour cost variance = (SR x ST) - (AR x ATp) = 21600 - 29700 = 8100/- (A)

Labour rate variance = (SR x ATP) - (AR x ATP) = 23760 - 29700 = 5940/- (A)

Labour Idle time variance = (SR x ATw) - (SR x ATP) = NIL

Labour Mix Variance = (SR x SM) - (SR x ATw) = NIL

Labour Efficiency Variance = (SR x ST) - (SR x SM) = 21600 - 23760 = 2160 (A)

QN 4. Answer any **three** of the following :**[3 x 3 = 9 marks]**

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- (i) Standard Time for a job is 90 hours. The hourly rate of Guaranteed wages is Rs. 50. Because of the saving in time a worker gets an effective hourly rate of wages of Rs. 60 under Rowan premium bonus system. For the same saving in time, calculate the hourly rate of wages a worker B will get under Halsey premium bonus system assuring 40% to worker.
- (ii) Explain briefly, what do you understand by Operating Costing. How are composite units computed ?
- (iii) The following information relating to a type of Raw material is available :

Annual demand 2000 units

Unit price Rs. 20.00

Ordering cost per order Rs. 20.00

Storage cost 2% p.a.

Interest rate 8% p.a.

Lead time Half-month

Calculate economic order quantity and total annual inventory cost of the raw material.

(iv) List the eight functional budgets prepared by a business.

Ans (4) (i) Time Allowed = 90 hours
 Time taken = x hours (Assumed)
 Time saved = 90 - x

Total Earning of the worker under Rowan System

Total = Time wages + Bonus Earning

$$60x = (x \times 50) + \frac{TT}{TA} \times TS \times \text{Guaranteed wages per hour}$$

$$60x = 50x + \frac{x}{90} \times (90 - x) \times 50$$

$$10x = 50x^2 - \frac{50x^2}{90}$$

$$\frac{50x^2}{90} = 50x - 10x$$

$$50x^2 = 40x \times 90$$

$$x^2 = \frac{40x \times 90}{50} \quad \text{WWW.GNTMASTERMINDS.COM}$$

$$\therefore x^2 = 72x$$

$$\therefore x = 72 \text{ hours}$$

TT = Time Taken (Hours)

TA = Time Allowed (")

TS = Time Saved (")

Total earning of the worker under halsey scheme (40%) For the same savings in time

Total Earning = Time wages + Bonus

= Time wages + 50% of time saved x Guaranteed wages

= (50% x 72 hours) + 50% [18 hours x 50/-]

= 3600/- + 450/- = 4050 /-

Total Earning

Hourly Earning of worker B = -----

TT

$$= \frac{4050 \text{ /-}}{72 \text{ hrs}} = 56.25 \text{ /-}$$