

*Jasmine*

Guru Nanak Dev Engineering College, Ludhiana			
Department of Applied Science			
Program	B.Tech. (CEA,EEB ECB)	Semester	I
Subject Code	HSMC-103	Subject Title	PEEM
Mid Semester Test No.	1	Course Coordinator	Pf. Jasmine Kaur
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	26-09-2023	Roll Number	

**Note:** Attempt all questions

Q. No.	Question	COs, RBT level
Q1	Explain Lionel Robbins definition of Economics.	CO1, L1
Q2	Define the term "Giffen's Paradox".	CO2, L1
Q3	Explain the properties of Indifference Curve with the help of suitable graphs.	CO2, L3
Q4	Explain the Scientific Principles of management given by F.W Taylor.	CO4, L2, L3
Q5	"Poor families spend a relatively large part of their income on necessities, whereas rich families spend a relatively large part of their income on luxuries". Defend or refute the statement with the help of suitable graphs.	CO2, L3, L4
Q6	Explain the methods of Elasticity of demand in detail.	CO2, L4, L5

**Course Outcomes (CO)** Students will be able to

1	Understand economics and basic concepts
2	Understand demand and its application in analyzing consumer behavior
3	Evaluate cost of various factors of production
4	Ensure effective and efficient use of various cost analysis
5	Apply various techniques for replacement studies
6	Evaluate various factors of production and ensure its applications for cost reduction

RBT Classification	Lower Order Thinking Levels			Higher Order Thinking Levels	
RBT Level Number	L1	L2	L3	L4	L5
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating



PEE

Guru Nanak Dev Engineering College, Ludhiana				
Department of Applied Science				
Program	B.Tech. (ECE A, ECE B, ITA, ITB, IT C, ME B)	Semester	II	
Subject Code	HSMC-103	Subject Title	PEEM	
Mid Semester Test No.	1	Course Coordinator	Pf. Jasmine Kaur	
Max. Marks	24	Time Duration	1 hour 30 minutes	
Date of MST	31-03-2023	Roll Number		
Note: Attempt all questions				
Q. No.	Question	COs, RBT level	Marks	
Q1	Can marginal product be zero or negative?	CO6, L1	2	
Q2	How does the availability of close substitutes affect elasticity of demand of a product?	CO2, L1	2	
Q3	Discuss the relationship between TP and MP with the help of suitable diagram.	CO6, L4	4	
Q4	Explain the law of returns to scale with the help of suitable diagrams.	CO6, L3	4	
Q5	Which principle of management states that the communication should flow through a proper channel? State and explain the principle. Also state any one disadvantage of the principle.	CO4, L3	4	
Q6	a- Calculate cost of production when: Prime cost= Rs 550,500, factory overheads are 45% of factory cost, and office and administration overheads are 30% of factory cost. b- Calculate value of raw material consumed from the following data: Opening stock of raw material= Rs 35000, purchases= 95000, closing stock = Rs 15000, direct labour= Rs 10,000, purchase returns= Rs 2000.	CO3, L6	(4+4=8)	
Course Outcomes (CO) Students will be able to				
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2	Understand demand and its application in analyzing consumer behavior.			
3	Evaluate cost of various factors of production.			
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RBT Classification	Lower Order Thinking Levels			Higher Order Thinking Levels		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating



Guru Nanak Dev Engineering College, Ludhiana																						
Department of Applied Science																						
Program	B.Tech. (ECE A, ECE B, ITA, ITB IT C, ME B)	Semester	I																			
Subject Code	HSMC-103	Subject Title	PEEM																			
Mid Semester Test No.	2	Course Coordinator	Pf. Jasmine Kaur																			
Max. Marks	24	Time Duration	1 hour 30 minutes																			
Date of MST	24-05-2023	Roll Number																				
Note: Attempt all questions																						
Q. No.	Question	COs, RBT level	Marks																			
Q1	Differentiate between Total fixed cost and Total Variable cost.	CO3, L1	2																			
Q2	What is meant by break-even Point?	CO4, L1	2																			
Q3	Calculate economic order quantity when annual consumption is 48000 units, Ordering cost is Rs 9 per order, Carrying cost is 15% of per unit cost and per unit cost is Rs 4 per unit. $EOQ = 1200, N.O.B = 40$	CO2, L3, L4, L5	4																			
Q4	"Costing is an aid to management". Comment	CO6, L2, L3																				
Q5	Explain the assumptions of the theory of Marginal productivity.	CO3, L1, L2	4																			
Q6	Select the best project by Net Present Value Method and give reason for the same. Estimated life of the asset is 5 years. <table><tr><th>Cash inflows of Project A in Rs</th><th>Cash inflows of Project B in Rs</th><th>Net Present Value of Re.1@ 10% discounting factor</th></tr><tr><td>110,000</td><td>70,000</td><td>0.909</td></tr><tr><td>100,000</td><td>56,000</td><td>0.826</td></tr><tr><td>65000</td><td>90,000</td><td>0.751</td></tr><tr><td>120,000</td><td>1,50,000</td><td>0.683</td></tr><tr><td>80,000</td><td>80,000</td><td>0.621</td></tr></table> <p>Project A: Initial Investment=Rs 2,50,000 - 113045 (✓) Project B: Initial Investment= Rs 300,000 - 29606 (X)</p>	Cash inflows of Project A in Rs	Cash inflows of Project B in Rs	Net Present Value of Re.1@ 10% discounting factor	110,000	70,000	0.909	100,000	56,000	0.826	65000	90,000	0.751	120,000	1,50,000	0.683	80,000	80,000	0.621	CO5, L6	8	
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RBT Classification	Lower Order Thinking Levels			Higher Order Thinking Levels		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating



PEEM

②

Note: Attempt all questions				
Q. No.	Question	COs, RBT level	Marks	
Q1	Define Consumer's Surplus	CO2, L1	2	
Q2	Define the term " Carrying Cost"	CO4, L1	2	
Q3	Differentiate between Unity of Command And Unity Of Direction.	CO4, L3	4	
Q4	Calculate economic order quantity and number of orders when annual consumption= 40000 Units, Carrying cost per unit= 50 Rs and cost of placing an order= 25.	CO6, L5	(2+2=4)	
Q5	Explain the assumptions of Marginal productivity theory.	CO2, L4	4	
Q6	Draw break even chart from the following data and also verify numerically- Fixed cost= Rs 250,000 , variable cost= Rs 20 per unit, Selling price= Rs 45 per unit.	CO6, L6	8	

Course Outcomes (CO)	
1	Understand economics and basic concepts.
2	Understand demand and its application in analyzing consumer behaviour.
3	Evaluate cost of various factors of production.
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5	Apply various techniques for replacement studies.
6	Evaluate various factors of production and ensure its application for cost analysis

RBT Classification	Lower Order Thinking Levels			Higher Order Thinking Levels		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

[illegible]



Guru Nanak Dev Engineering College, Ludhiana			
Department of Applied Science			
Program	B.Tech. (CSE, IT, CSE, C, CSE, D, FEA, CEE, CE, A)	Semester	I
Subject Code	HSMIC-101	Subject Title	PEEM
Mid Semester Test No.	2	Course Coordinator	Dr. Jasmine Kaur
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	15-11-2022	Roll Number	

Note: Attempt all questions			
Q. No.	Question	COs, RBT level	Marks
Q1	Define the term demand	CO1, L1	2
Q2	Explain the difference between cost and price.	CO3, L1	2
Q3	Explain the properties of indifference curve with the help of diagrams.	CO2, L2	4
Q4	Explain the relationship between TFC, TVC and TC with the help of diagrams.	CO3, L3	4
Q5	Explain the law of returns to scale.	CO3, L4	4
Q6	<p>A) From the following data calculate Net factory cost-</p> <p>Closing stock of raw material- Rs. 800,000</p> <p>Direct wages-Rs 3,45,000</p> <p>- Carriage inwards- Rs10,000</p> <p>Opening stock of work in progress- Rs 60,000</p> <p>Opening stock of raw material- Rs 75000</p> <p>Depreciation on office building- Rs 80,000</p> <p>Heat, light and power- Rs 90,000</p> <p>Factory repairs- Rs24,500</p> <p>Factory supervision- Rs 67,55</p> <p>Closing stock of work in progress-Rs 87900</p> <p>Purchase of raw material-Rs 4500</p> <p>Purchase Returns-Rs 2000</p> <p>Sale of waste-Rs 3590</p> <p>Sale of scrap- 9300</p> <p>Heat, light and power is to be distributed in the ratio of 5:4:1 among factory, office and sales respectively.</p> <p>B)- Define works cost</p>	CO6, L6	(6+2=8)

**Course Outcomes (CO) Students will be able to**

1	Understand economics and basic concepts.
2	Understand demand and its application in analyzing consumer behavior.
3	Evaluate cost of various factors of production.
4	Ensure effective and efficient use of various cost analysis
5	Apply various techniques for replacement of assets
6	Evaluate various factors of production and ensure its applications for cost reduction.

RBT Classification	Lower Order Thinking Levels-			Higher Order Thinking Levels		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating



Define (a) Cost (b) Defender

2. Complete the following :-

(a)  $\text{Sales} = \text{Total Cost} + \text{Profit}$

Q3. Calculate Economic order quantity (EOQ) Annual consumption = 200,000 units ordering cost = Rs. 80 per unit inventory carrying cost = Rs. 2 per unit

Q4. "Marginal productivity theory of distribution is widely acceptable by the trade unions. Comment and explain assumptions of the theory."

Q5. "Break even analysis is an aid to management" Comment and draw the graph.

Q6. (A) Calculate playback period initial investment of the project = Rs. 300,000 cash inflow = Rs 60,000 per year.

(B) Calculate profit and sales from following data :-

Particulars	Amount (in Rs)	Particulars	Amount (in Rs)
value of raw material used	80,000	Direct labour	70% of RM used
office & administration overheads	30% of factory	Direct expenses	20% of Direct labour
selling & distribution overheads	40% of Cost Sales	factory overhead.	50% of prime cost



PEEM

1

Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes

MORNING

09 JUL 2022

Total No. of Questions: 09]

Unit, Roll No. ....

Program: B.Tech.

MORNING

09 JUL 2022

[Total No. of Pages: 02]

Semester (1/2)  
Name of Subject: Principles of Engineering Economics and Management  
Subject Code: HSMC-103  
Paper ID: 15928

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately
- 4) Use of calculator is allowed

Part - A

[Marks: 02 each]

Q1.

- (a) Define (i) Economics (ii) Average cost
- (b) Explain Esprit De Corps.
- (c) Define (i) Direct Cost (ii) Work in progress.
- (d) Explain any two economies of scale of production.
- (e) "Good management is the lifeblood of the healthy corporate body. Getting rid of it to save cost is like losing weight by giving blood". Comment.
- (f) Draw the graph of point method of elasticity of demand.

Part - B

[Marks: 04 each]

- Q2. Draw the diagrams and explain properties of Indifference curves.
- Q3. Calculate Prime Cost when value of raw material used = Rs 35,500 Direct Wages are 25% of raw material used and Direct Expenses are 15% of Direct Wages.
- Q4. Draw the graph and calculate Break Even Point, when Fixed Cost = Rs 3,50,000, Selling Price = Rs 75/unit and Variable Cost = Rs 25/unit.
- Q5. Calculate Payback period when initial investment is Rs 6,05,000 and annual cash inflows are Rs 1,10,000.
- Q6. "Replacing an asset can be an expensive decision." Comment.
- Q7. "First two stages are just the passing phases, third stage is the ultimate law of variable proportions." Comment and draw the diagram.

12 Mark in theory portion

Topics

- ① Modern P-T
- ② Marginal P-T
- ③ Degree of elasticity
- ④ Law of variable and law of return to scale  
Proportion (TP, MP, AP) & in agriculture
- ⑤ Economics and diseconomics

Page 1 of 2

P.T.O.



MORNING  
09 JUL 2022

Part - C

[Marks: 12 each]

- Q8. Explain Modern Productivity theory of distribution.  
Or  
2 Define Elasticity of Demand, explain and draw the diagrams of price elasticity of demand.
- Q9. Select the best project by Net Present Value method and give reason for the same. (estimated life of the projects is 6 years)

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
Rs 2,00,000	Rs 195,000	0.909
Rs 1,90,000	Rs 1,90,000	0.826
Rs 1,55,000	Rs 1,65,000	0.751
Rs 1,15,000	Rs 1,10,000	0.683
Rs 75,000	Rs 85,000	0.621
Rs 65,000	Rs 60,000	0.564

Project A : Initial investment of the project = Rs 3,35,000

Project B : Initial investment of the project = Rs 3,30,000

Or

- \* Calculate internal rate of return when:  
Initial outlay = Rs 2,00,000, Net cash Inflow per annum = Rs 45,000, Estimated life of the Project is 7 years and required rate of return is 9%. Discount factor at 11% is 4.7122 and Discount factor at 17% is 3.9224. Give your opinion whether the project should be accepted or rejected

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Total No. of Questions: 09]

[Total No. of Pages: 02]

Uni. Roll No. 2203347

Program: B.Tech.

Semester ( 1/2)

Name of Subject: Principles Of Engineering Economics and Management

Subject Code: HSMC-103

Paper ID: 15928

Time Allowed: 03 Hours

Max. Marks: 60

## NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

## Part – A

[Marks: 02 each]

Q1.

- a) Define (i) Demand (ii) Management
- b) Explain Consumer Surplus.
- c) Define (i) Cost (ii) Profit.
- d) Explain any two principles of management. *what is range price, pathomistic style.*
- e) "Giffen's Paradox is exception to law of Demand". Comment.
- f) Draw the graph of total expenditure method of elasticity of demand.

## Part – B

[Marks: 04 each]

- Q2. Draw the diagrams of degrees of elasticity of demand.
- Q3. Calculate economic order quantity when consumption = 4000 units, ordering cost = Rs 200 and carrying cost = Rs 10.
- Q4. Explain any four reasons for replacement.
- Q5. Calculate value of raw material consumed from the following data : opening stock of raw materials = Rs 35000, purchases = Rs 95000, closing stock of raw materials = Rs 20000, labour = Rs 10000 ; purchases returns = Rs 3000.
- Q6. "Costing is an aid to management." Comment.
- Q7. "Indifference curves are convex to the origin." Comment and draw the diagram.

## Part – C

[Marks: 12 each]

- Q8. (i) Explain Marginal productivity theory.  
Or  
(ii) Explain economies of scale of production.
- Q9. Draw the graph and calculate Break Even Point when fixed cost = Rs 150000, selling price = Rs 50/unit and variable cost = Rs 30/unit.  
Or





4

Select the best project by Net Present Value method and give reason for the same (estimated life is 5 years)

Project A : Initial investment of the project 3,50,000 , Scrap value = Rs 30,000

Project B : Initial investment of the project = Rs 300,000 , Scrap value = Rs 25,000

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
Rs 1,00,000	Rs 90,000	0.909
Rs 1,30,000	Rs 1,00,000	0.826
Rs 95,000	Rs 1,35,000	0.751
Rs 88,000	Rs 1,15,000	0.683
Rs 80,000	Rs 95,000	0.621

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29-01-2022(M)

Total No. of Questions: 09]

[Total No. of Pages: 02]

Program: B.Tech.

Semester (1/2)

Name of Subject: Principles Of Engineering Economics and Management

Subject Code: HSMC-103

Paper ID: 15928

Max. Marks: 60

Time Allowed: 02 Hours

NOTE: Attempt any six questions .All questions carry equal marks

Q1 "Need is not demand. Effective economic demand requires not merely need but corresponding purchasing power" comment. Draw the diagram of Law of Demand and explain various assumptions of Law of Demand.

Q2 "The law of returns to scale examines the relationship between output and the scale of inputs in the long-run". Comment and explain diseconomies of scale of production .

Q3 (a) Calculate economic order quantity(EOQ) and number of orders when consumption =3,00,000 units, ordering cost=Rs 30 per unit and carrying cost=Rs 2 per unit  
(b) Calculate profits and sales when : cost of production is Rs 5,50,500 ,selling and Distribution overheads are 20% of cost of sales and profits are 20% on sales.

Q4 "Indifference curve is a set of combinations of two goods that gave the buyer or the customer equal satisfaction or utility". Comment and explain properties of Indifference curve .

Q5 Draw Breakeven Chart from the following data and also verify numerically .  
Fixed cost = RS 3,00,000 ; Variable Cost =RS 25 per unit; Selling price =RS 55 per unit

Q6 "Select the best project by Net Present Value method and give reason for the same (estimated life of the projects is 6 years)

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
Rs 1,80,000	Rs 160,000	0.909
Rs 1,60,000	Rs 1,40,000	0.826
Rs 1 25,000	Rs 1,05,000	0.751
Rs 95,000	Rs 90,000	0.683
Rs 75,000	Rs 70,000	0.621
Rs 65,000	Rs 60,000	0.564

Project A : Initial investment of the project =Rs 3,90,000

Project B : Initial investment of the project =Rs 3,70,000



Q7

From the following data Prepare a Cost Sheet and calculate profits.

Particulars	Amount in Rupees	Particulars	Amount in Rupees
Opening stock of raw materials	22,000	Office stationery	500
Direct wages	45,000	Director's fee	5,300
Closing stock of raw material	20,000	Salesman's salary	2,000
Electric power	7,000	Advertisement	2,200
<b>Lighting:</b>		<b>Depreciation:</b>	
Factory →	2,000	Factory →	3,900
Office →	1,000	Office →	2,000
Purchase of raw material	1,50,000	General Manager's Salary	5,800
<b>Rent :</b>		<b>Repairs:</b>	
Factory →	9,000	Factory →	3,600
Office →	2,200	Office →	950
Purchases returns	15,000	Direct Expenses	5,000
Carriage inwards	600	Carriage outwards	825

Profits are 20 % on sales.

Q8.

Rank the projects from the following data according to Pay Back Period Method.

Initial investment required for the project A = Rs 1, 80,000

Initial investment required for the project B = Rs 2, 20,000

Net profits before tax and after depreciation are as follow

Year	Project A	Project B
1st	Rs 90,000	Rs 1,10,000
2nd	Rs 60,000	Rs 80,000
3rd	Rs 45,000	Rs 90,000
4 <sup>th</sup>	Rs 30,000	Rs 75,000
5 <sup>th</sup>	Rs 20,000	Rs 35,000

Q9.

"Management is what manager does." comment and explain Taylor's Principles of Scientific Management.

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26-02-2022(M)

Total No. of Questions: 09]

[Total No. of Pages: 03]

Program: B.Tech.

Semester (1/2)

Name of Subject: Principles Of Engineering Economics and Management

Subject Code: HSMC-103

Paper ID: 15928

Time Allowed: 02 Hours

Max. Marks: 60

NOTE: Attempt any six questions .All questions carry equal marks

- Q1. "Goods move in response to price differences from points of low to points of higher price, the movement tending to obliterate the price difference and come to rest ." comment and explain methods of elasticity of Demand.
- Q2. "The law of variable proportions states that as the quantity of one factor is increased, keeping the other factors fixed, the marginal product of that factor will eventually decline". Comment. Draw the diagram of law of variable proportions and explain assumptions of the law.
- Q3. (a) Calculate economic order quantity(EOQ) and number of orders when annual consumption = 3,00,000 units, ordering cost=Rs 30 per unit and carrying cost=Rs 2 per unit  
(b) Calculate cost of production when : Prime cost is Rs 5,50,500 ,Factory overheads are 45% of factory cost and office and administration overheads are 30% of factory cost .
- Q4. "Marginal Productivity theory of distribution is widely acceptable by the trade unions". Comment and explain the assumptions of the theory.
- Q5. "Costing is an aid to management." Comment and Draw Breakeven Chart when , Fixed cost = Rs 4,20,000 ; Variable Cost =Rs 38 per unit; Selling price =Rs 54 per unit. Also verify numerically
- Q6. Select the best project by Net Present Value method and give reason for the same (estimated life of the projects is 6 years)

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 12 % discounting factor
Rs 2,90,000	Rs 2,60,000	0.892
Rs 2,65,000	Rs 2,40,000	0.797
Rs 2,35,000	Rs 2,25,000	0.712
Rs 1,05,000	Rs 1,00,000	0.635
Rs 85,000	Rs 80,000	0.567
Rs 70,000	Rs 45,000	0.507

Scrap value of Project A =Rs 20,000

Scrap value of Project A =Rs 10,000

Project A : Initial investment of the project =Rs 5,70,000

Project B : Initial investment of the project =Rs 5,20,000



Q7

From the following data Prepare a Cost Sheet and calculate profits .

Particulars	Amount in Rupees	Particulars	Amount in Rupees
Opening stock of raw materials	32,000	Office stationery	900
Direct wages	95,000	Director's fee	10,700
Closing stock of raw material	20,000	Salesman's salary	5,000
Electric power	15,000	Advertisement	4,200
<b>Lighting:</b>		<b>Depreciation:</b>	
Factory	7,000	Factory	6,900
Office	4,000	Office	1,000
Purchase of raw material	1,90,000	General Manager's Salary	9,800
<b>Rent :</b>		<b>Repairs:</b>	
Factory	8,000	Factory	5,600
Office	1,200	Office	1850
Purchases returns	25,000	Direct Expenses	8,000
Carriage inwards	1,000	Carriage outwards	2000
Opening stock of work in progress	45,000	Closing stock of work in progress	30,000
Legal expenses	4,000	Travelling expenses	3,000
Audit fee	5,000	Indirect expenses	3,500
Opening stock of finished goods	1,30,000	Closing stock of finished goods	80,000

Profits are 25 % on sales.

Q8.

Rank the projects from the following data according to Pay Back Period Method .  
 Initial investment required for the project A =Rs 3,75,000  
 Initial investment required for the project B =Rs 3,70,000  
 Net profits before tax and after depreciation are as follow :

Year	Project A	Project B
1st	Rs 1,50,000	Rs 1,60,000
2nd	Rs 1,40,000	Rs 1,35,000
3rd	Rs 1,05,000	Rs 1,00,000
4 <sup>th</sup>	Rs 80,000	Rs 95,000
5 <sup>th</sup>	Rs 60,000	Rs 65,000



Q9 (i) Differentiate between unity of command and unity of direction

(ii) Complete the following:

Sales =  $\frac{T.C}{P}$  +  $\frac{Profit}{P}$  +  $\frac{Loss}{P}$

(b)  $TC = TVC + TFC$

(iii) "Giffen's Paradox is exception to law of Demand". Comment.

(iv) Draw the diagram and give reason why cost curves are U shaped ? (2+2+2+2)



Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages: 02]

Uni. Roll No. ....

Program: B.Tech.

Semester: 1/2

Name of Subject: Principles of Engg. Economics and Mgt.

Subject Code: HSMC-103

Paper ID: 15928

Time Allowed: 02 Hours

Max. Marks: 60

NOTE:

- 1) Each question is of 10 marks.
- 2) Attempt any six questions out of nine
- 3) Any missing data may be assumed appropriately

14-07-21(M)

- Q1. "Demand depends on many factors" comment. Draw the diagrams and explain Various degrees of elasticity of demand
- Q2. "Under static conditions, every factor including the entrepreneur would get remuneration equal to its marginal product". Comment and explain assumptions of Marginal Productivity Theory of Distribution.
- Q3. (a) Calculate economic order quantity (EOQ) and number of orders when consumption = 4,00,000 units, ordering cost = Rs 40 per unit and carrying cost = Rs 2 per unit  
(b) Calculate profits and sales when : cost of production is Rs 1,90,500, selling and Distribution overheads are 30% of cost of production and profits are 25% on sales. (5+5)
- Q4. (a) Draw the diagrams of properties of Indifference curves and give reasons for the same.  
(b) Explain the relationship among marginal product, average product and total product and draw the diagram of law of variable proportions. (5+5)
- Q5. Draw Breakeven Chart from the following data and also verify numerically  
Fixed cost = RS 2,50,000 ; Variable Cost = RS 20 per unit; Selling price = RS 45 per unit.
- Q6. From the following data Prepare a Cost Sheet and calculate profits.

Particular	Amount(in rupees)	Particular	Amount(in rupees)
Opening stock of Raw Material P.C	1,60,000	Opening stock of Work In Progress	3,00,000
Opening stock of Finished Goods	70,000	Office Appliances	19,000
Plant and Machinery	3,70,000	Buildings	1,80,000
Sales	8,98,000	Sales Returns	10,000
Material purchased	3,28,000	Freight on materials purchased	12,000
Purchase returns	5,800	Direct labour	1,70,000
Indirect labour	19,000	Factory supervision	11,000
Factory repairs	17,000	Heat, light & power	75,000
Carriage outwards	2,000	Sales travelling	9,000
Sales Promotion	20,800	Distribution department salaries & wages	17,000
Office salaries	9,600	Closing stock of Raw Material	1,70,000
Closing stock of Work In Progress	1,86,000	Closing stock of Finished Goods	1,05,000

$$\text{Profit} = \text{Sales} - \text{T.C}$$



Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

Depreciation should be provide as 5% on OfficeAppliances,10% on Machinery and 4% on Buildings. Heat, light and power are to be distributed in the ratio of 8:1:1 among factory, office and selling & distribution respectively.

Q7. "Select the best project by Net Present Value method and give reason for the same (estimated life of the projects is 5 years)

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
Rs 1,80,000	Rs 160,000	0.909
Rs 1,60,000	Rs 1,40,000	0.826
Rs 1 25,000	Rs 1,05,000	0.751
Rs 95,000	Rs 90,000	0.683
Rs 75,000	Rs 70,000	0.621

Project A : Initial investment of the project =Rs 4,00,000  
Project B : Initial investment of the project =Rs 350000

Q8. Rank the projects from the following data according to Pay Back Period Method .  
'Initial investment required for the project A =Rs 2, 00,000 ,  
Initial investment required for the project B =Rs 2, 50,000  
Net profits before tax and after depreciation are as follow

Year	Project A	Project B
1st	Rs 100,000	Rs 1,20,000
2nd	Rs 70,000	Rs1,00,000
3rd	Rs 45,000	Rs 90,000
4 <sup>th</sup>	Rs 90,000	Rs 95,000
5	Rs 70,000	Rs 75,000

Q9. "Management is getting things done through others" comment with the help of Henri Fayol's Principles of Management .

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MORNING

10 MAR 2021

[Total No. of Pages: 02]

Total No. of Questions: 09]

Uni. Roll No. ....

Program: B.Tech.

Semester (1/2)

Name of Subject: Principles Of Engineering Economics and Management

Subject Code: HSMC-103

Paper ID: 15928

Max. Marks: 60

Time Allowed: 03 Hours

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part - A

[Marks: 02 each]

Q1.

- a) Define (i) Economics (ii) Cost
- b) Explain Giffen's Paradox.
- c) Define (i) Price (ii) Marginal Cost.
- d)  $TC = FC + VC$ ,  $S-V = \text{---} + \text{---}$
- e) Consumer's Surplus = ?
- f) Da f (-----).

Part - B

[Marks: 04 each]

- Q2. Draw the diagrams of Law of variable proportions and explain different stages of the law.
- Q3. Calculate profits and sales when cost of production is Rs 3,40,000 selling and distribution overheads are 30% of cost of production and profits are 20% of cost of sales.
- Q4. "Marginal product increases or decreases at a higher rate than average product." Comment
- Q5. Calculate value of raw material consumed from the following data : opening stock of raw materials = Rs 45,000 purchases = Rs 10,05,000 closing stock of raw materials = Rs 35,000, carriage inwards = Rs 10,000, purchases returns = Rs 50,000 carriage inwards = Rs 15,000.
- Q6. Calculate payback period when Investment = Rs 2,00,000 and annual returns = Rs 80,000
- Q7. "Management is getting things done through others." Comment and Explain any four principles of management.

(1)



MORNING

10 MAR 2021

[Marks: 12 each]

## Part - C

Q8. (1) Draw the diagrams of degrees of elasticity of demand .  
Or

(2) Explain diseconomies of scale of production .

Q9. (2) Draw the graph and calculate Break Even Point when fixed cost = Rs 2,50,000, selling price = Rs 80/unit and variable cost = Rs 55/unit . Verify the answer numerically also.  
Or

(b) Calculate Profit and Sales from the following data:  
 - Opening balance of Raw Materials = Rs 1,70,000  
 Purchases of Raw Materials = Rs 400,000  
 Closing Stock of Raw Materials = Rs 1,20,000  
 Carriage Inwards = Rs 20,000  
 Purchases returns = Rs 30,000  
 Direct Wages are 75 % of raw materials consumed  
 Direct Expenses are 10% of direct wages  
 Factory overheads are 40% of factory cost ,  
 Office and administration overheads are 45% of works cost ,  
 Selling and distribution overheads are 25% of cost of production  
 Opening stock of finished goods = Rs 50,000  
 Closing Stock of finished goods = Rs 40,000  
 and profits are 20 % on sales

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(2)



MORNING

07 DEC 2019

[Total No. of Pages: 02]

[Total No. of Questions: 09]

Uni. Roll No. ....

Program/ Course: B.Tech. (Sem. 1/2)

Name of Subject: Principles of Engg Economics and Management

Subject Code: HSMC- 103

Paper ID: 15928

Max. Marks: 60

Time Allowed: 03 Hours

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Use of scientific calculator is allowed.

Part - A

[Marks: 02 each]

Q1.

- a) Define (i) Variable Cost (ii) Price
- b) Indifference curve is convex to origin. Comment.
- c) Explain: Remuneration of employees.
- d) "Costing is an aid to management". Comment.
- e) Calculate Contribution from the following data:

Particulars	Project A	Project B
Variable cost	Rs 25,000	Rs 18,000
Sales	Rs 315,000	Rs 158,000

Fixed cost is Rs 85,000 for both the projects.

- f) Explain: Internal Economies to scale

Part - B

[Marks: 04 each]

- Q2. Define Management. Differentiate between Unity of Command and Unity of Direction.
- Q3. Differentiate between carrying cost and ordering cost. Calculate EOQ from the following:  
Annual consumption = 8000 units; Ordering cost = Rs 80; Carrying cost = Rs 2
- Q4. Draw the diagram and explain why cost curves are L shaped?
- Q5. Explain (a) Consumer Surplus with example  
(b) Engels Law
- Q6. From the following data calculate prime cost:

Particulars	Amount(Rs)	Particulars	Amount(Rs)
Opening balance of raw materials P	25600	Direct expenses P	34700
Purchases P	43400	Purchases returns P	4000
Carriage outwards S	8000	Direct Labour P	20300
Closing stock of raw material P	7000	Carriage inwards P	2000

- Q7. Calculate payback period of investment from the following particulars:  
Initial investment = Rs. 1, 50,000. Profits are Rs. 30,000, Rs. 56,000, Rs. 54,000 and Rs. 20,000 respectively for four years.



MORNING

07 DEC 2019

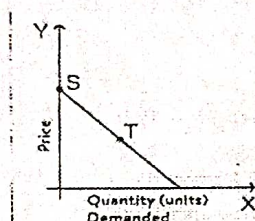
## Part - C

[Marks: 12 each]

Q8. i) Differentiate between Law of Variable proportion and Law of returns to scale. Elaborate the relationship between TP, MP and AP with graph. Also explain how law of variable proportion is applicable on agriculture?

Or

ii) Define elasticity of demand. Draw the graph and explain the total expenditure method of elasticity. What will be the Elasticity at point S and T and why?



Q9. Prepare statement of cost and calculate Profit from the following data:

Particulars	Amount	Particulars	Amount(Rs)
Opening stock(raw material)	5,000 Rs	Auditor fee	1400
Closing stock (raw material)	3,000 Rs	Packing and distribution	6000
Purchase of raw material	28,000 Rs	Bank charges	8000
Direct Wages	18,000 Rs	Exhibition expenses	6000
Machine hours worked	900 hours	Legal charges	2000
Machine hour rate	5 Rs	Carriage outwards	4000

Units produced = 34200 whereas Units sold = 32000 at 3 Rs per unit.

Or

Select the best project by Net Present Value method. Give reason (estimated life is 5 years)

Project A: Initial investment of the project = Rs 2,50,000 , Scrap value = Rs 20,000

Project B: Initial investment of the project = Rs 3,50,000 , Scrap value = Rs 45,000

Cash inflows of project A	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
Rs 70,000	Rs 95,000	0.909
Rs 80,000	Rs 1,10,000	0.826
Rs 90,000	Rs 1,35,000	0.751
Rs 88,000	Rs 1,25,000	0.683
Rs 75,000	Rs 90,000	0.621



MORNING

[Total No. of Pages: 02]

[Total No. of Questions: 09]

15 MAY 2019

Uni. Roll No. ....

Program/ Course: B.Tech. (Sem. 1/2)

Name of Subject: Principles of Engg Economics and Management

Subject Code: HSMC-103

Paper ID: 15928

Max. Marks: 60

Time Allowed: 03 Hours

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Use of scientific calculator is allowed.

[Marks: 02 each]

Part- A

Q1.

- a) Define (i) Profit (ii) Management.
- b) Two indifference curves never meet each other. Comment.
- c) Define elasticity of Demand and explain its types.
- d) Giffen's paradox is exception to law of demand, why?
- e) "Costing is an aid to management". Comment
- f) Calculate contribution from the following data:

Particulars	Project A	Project B
Sales	Rs. 50,000	Rs 90000

Fixed Cost = Rs 10,000

Variable Cost Project A= Rs 10,000 Variable Cost Project B=Rs 45,000

Part- B

[Marks:04 each]

Q2. Calculate EOQ and number of orders from the following data:

Annual usage(units) = 4000

Carrying cost of inventory = Rs 2

Ordering cost = Rs 40

Q3. Draw the diagram and explain why cost curve is Dish shaped?

Q4. Differentiate between Management and Scientific Management.

Q5. Calculate Average Rate of Return on the Investment from the following data:

Initial investment = Rs 3,00,000. Scrap value of Rs 10,000. Expected life = 5 years

Expected profit for 5 years are Rs 55,000; Rs 70,000; Rs 85,000; Rs 60,000; Rs 40,000 respectively.

Q6. Calculate the Works Cost from the following:

Particulars	Amount(Rs)	Particulars	Amount(Rs)
Opening stock(raw material) <i>P.C</i>	10000	Purchases	185000 <i>P.C</i>
Purchase return <i>P.C</i>	2000	Direct labour	30% of raw materials consumed <i>P.L</i>
Carriage Inwards <i>P.C</i>	1000	Direct expenses	20% of Direct Labour <i>P.C</i>
Closing stock (raw material) <i>P.C</i>	4000	Factory overheads	40% of works cost
Packing & distribution expense <i>S&amp;P</i>	1560	Carriage outwards <i>S&amp;P</i>	4000



MORNING

15 MAY 2019

Q7. "Break even analysis is an essential calculation in the profitability of business". Comment and explain with the help of diagram.

Part-C

[Marks:12 each]

Q8. Explain internal and external economies and diseconomies of large scale production.

Or

II Explain the Law of Variable proportion with the help of diagram. Also explain why it is applicable to agriculture very soon?

Q9. (i) Determine payback period from the following data :  
cash outlay = Rs 50,000, and cash inflows are Rs 20,000, Rs 15,000, Rs 12,000 and Rs 10,000 for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year respectively.  
(ii) Select the best project by Net Present Value method and give reason for the same (estimated life is 5 years)

Project A : Initial investment = Rs 3,50,000 , Scrap value = Rs 40,000

Project B : Initial investment = Rs 4,50,000 , Scrap value = Rs 55,000

Cash inflows of project A In Rs	Cash inflows of project B	Net Present Value of Re.1 @ 10% discounting factor
1,00,000	1,45,000	0.909
1,10,000	1,75,000	0.826
1,20,000	1,45,000	0.751
90,000	1,25,000	0.683
65,000	95,000	0.621

Or

The following cost data is available from the books of XY Ltd for the year ending 31<sup>st</sup> Dec, 2016. Prepare Cost sheet showing cost and profit. Also calculate selling price per unit. Number of units Produced and sold are 250

Particulars	Amount(Rs)	Particulars	Amount(Rs)
Stock of raw material (opening)	10,000	Director's Fee	4,800
Stock of raw material (closing)	15,000	Salesman salary	7,500
Purchases of raw material	80,000	Dep. on office furniture	1,200
Carriage inward	2.5% of purchases	Advertisement	4,000
Direct expenses	20% of direct wages	Office Stationery	2,500
Direct wages	40% of raw material consumed	Factory light and power	3,000
Carriage outward	3% of sales	Bank charges	400
Factory dep.	3,500	Office expenses	13,000
Repairs of machinery	1,500	Selling expenses	5,000

Works manager's salary is 13% of prime cost and profits are 25% of sales

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G-14

(27)

Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages: .....]

Uni. Roll No. 2203757

Program: B.Tech. (Batch 2018 onward)

Semester: 1/2

Name of Subject: Principles of Engineering Economics and Management

Subject Code: HSMC- 103

Paper ID: 15928

Scientific calculator is Allowed

Detail of allowed codes/charts/tables etc. ....NA.....

Time Allowed: 03 Hours

Max. Marks: 60

**NOTE:**

- 1) Parts A and B are compulsory.
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice.
- 3) Any missing data may be assumed appropriately.

**Part – A**

[Marks: 02 each]

Q1.

- a) Draw the diagram and give reason why cost curves are U shaped?
- b) Explain Giffen's Paradox.
- c) i) Complete the following: Sales = ---- + ---- + ----    ii) TC = ---- + ----
- d) Briefly explain the relationship between Break Even Point, Margin of Safety & Angle of Incidence.
- e) Two indifference curves never meet each other. Comment.
- f) Explain: Remuneration of Employees.

**Part – B**

[Marks: 04 each]

Q2.

"Costing is an aid to management." Comment.

Q3.

Calculate EOQ and number of orders from the following data:

Annual usage (units)= 4000

Carrying cost of inventory= Rs. 2

Ordering cost= Rs. 40

Q4.

Differentiate between Unity of Command and Unity of Direction.

Q5.

Calculate contribution from the following data:

Particulars	Project A	Project B
Sales	Rs. 50,000	Rs. 90,000

Fixed Cost = Rs. 10,000

Variable Cost Project A= Rs. 10,000

Variable Cost Project B= Rs. 45,000

Q6.

Management is getting things done through others." Comment and explain any four Fayol's principles of management.

Q7.

Distinguish between NPV &amp; IRR.



[Marks: 12 each]

Part – C

Q8. Differentiate between Law of Variable Proportions & Law of Returns to Scale. Elaborate the relationship between TP, MP & AP with graph. Also explain how law of Variable Proportions is applicable on agriculture.

OR

“Demand depends on many factors”. Comment. Draw the diagrams and explain the various degrees of elasticity of demand.

Q9. From the Following Information, Prepare Cost Sheet:

	Rs.		Rs.
✗ Finished Goods on 1-1-2022	50,000	• Heat, Light & Power	20,000
✓ Raw Materials on 1-1-2022	10,000	• Factory Insurance & Taxes	5,000
✓ Work – in – Progress on 1-1-2022	14,000	• Repairs to Plant	3,000
✓ Direct Labour	1,60,000	• Factory Supplies	5,000
✓ Purchase of Raw Material	98,000	• Depreciation – Factory Building	6,000
– Indirect Labour	40,000	• Depreciation – Plant	10,000

Other Information Made available is –

Factory Cost of Goods Produced in 2022 Rs. 2,80,000

✓ Raw Materials Consumed in 2022 Rs. 95,000

✓ Cost of Goods Sold in 2022 Rs. 1,60,000

No Office & Administration expenses were incurred during the year 2022.

OR

A Firm whose cost of capital is 10% is considering two mutually exclusive projects X & Y, the cash flows of which are given as follows:

Year	Project X	Project Y
	Rs.	Rs.
0	-100,000	-70,000
1	80,000	60,000
2	80,000	60,000

The Present Value of Re 1 to be received at the end of each year, at 10% p.a is given below:

Year	1	2	3	4	5
P.V	0.91	0.83	0.75	0.68	0.62

Suggest which project should be taken up using: (i) Net Present Value Method (ii) Profitability Index Method

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