Bachelor of Pharmaceutical Technology Examination, 2017
(2nd Year, 2nd Semester)
Industrial Management

Time: Three Hours   Full Marks: 100

1. **Fill in the blanks** (write only applicable word(s) or number(s), but not the whole sentence)   **1 x 16 = 16**

   (a)   Technical skills are predominantly the skill set of the _____ - level management'

   (b)   _____ , a French Industrialist, is regarded as the 'Father of Modern Management'.

   (c)   As per Little's theorem: _____ = λ / μ, where lambda (λ) is the average customer arrival rate and mu (μ) is the average service time for a customer.

   (d)   P = 40 - 0.2Qd and P = 10 + 0.10Qs, where P = price, Qd = Quantity demanded, Qs = quantity supplied. The equilibrium market quantity Q* = _____.

   (e)   To be effective, price floor is set _____ the market equilibrium price.

   (f)   _____ = Σ (probability of outcome i) x (payoff of outcome i for decision alternative j)

   (g)   If α and β are the output elasticities of capital and labour, respectively, and if $\alpha + \beta < 1$, the production function has a _____ returns to scale.

   (h)   Maximum number of partners in case of non-banking business is _____.

   (i)   An improvement in technology leads to a _____ shift of the supply curve.

   (j)   Assets are considered to have a _____ balance.

   (k)   _____ is called as the 'Primary book of entry'.

   (l)   _____ =(lead time) x (usage rate of stock).

   (m)   PERT stands for _____ Evaluation and Review Technique

   (n)   When Q* is the EOQ, and S* is the optimum backorder, the maximum inventory level = _____.

   (o)   Assets = Liabilities + _____.

   (p)   An event that represents the beginning of more than one activity is known as a _____ event.

2. **Answer any three questions.**   **10 x 3 = 30**

   (a) Write short notes on any two of the following: **5 + 5**
       (i) Isoquant;   **(ii** Assumption of utility,   **(iii)** Price elasticity of demand

   (b) Summarise Henry Fayol's contribution to General Administrative Theory.   **10**

   (c) The Phlebotomy room of Shiv Shyama Clinic has a queuing system for blood draws. An average of 25 patients arrives for a blood draw each hour. One full-time (very experienced) phlebotomist can take one patient every two minutes, thus 30 draws per hour can be done.

       Find out:
       (i)   The probability that there will be no patient in the blood drawing room.
       (ii) The probability that there will be three patients in the blood drawing room.
       (iii) Average number of patients waiting.
       (iv) Server utilization factor.
       (v) Average patients' waiting time.   **2 x 5**

   (d) A dealer supplies you the following information with regard to a product that he deals in:
       Annual demand = 10,000 units; Ordering cost = Rs. 10 per order; Price = Rs. 20 per unit; inventory carrying cost = 20% of the value of inventory per year.

The dealer is considering the possibility of allowing some backorder (stockout) to occur. He has estimated that the annual cost of back ordering will be 25% of the value of inventory.

(i) What should be the optimum number of units of product he should buy in one lot without backorder?
(ii) What should be the optimum number of units of product he should buy in one lot with backorder?
(iii) Determine the backorder quantity.
(iv) Determine the total annual variable cost with backorder.

$$2 + 3 + 2 + 3$$

(e) What do you understand by' Money'? What are its functions? List some tools used by the central government and RBI to control money supply. $2 + 3 + 5$

(f) With the help of a graphical presentation explain various stages of the law of variable proportions. **10**

3. **Answer any three questions.** 18 x 3 = 54

(a) What do you understand by 'Management' from organizational point of view? Summarize the scope of management. Present a diagram on steps of MBO process. Why does MBO fail sometimes? $2 + 8 + 5 + 3$

(b) Describe 'Joint Stock Company' How is it formed? What are its advantages and disadvantages? $3 + 7 + 8$.

(c) Annapurna Food Products Company is contemplating the introduction of a revolutionary new product with new packaging, or replacing the existing product at a much higher price (S1). It may even make a moderate change in the composition of the existing product with a new packaging at a small increase in price (S2), or may make a small change in the composition of the existing product backing it with the word 'New' and a negligible increase in price (S3). The three possible states of nature are: (i) high increase in sales (N1), (ii) no change in sales (N2), and (iii) decrease in sales (N3). The marketing department of the company worked out the payoffs in terms of yearly net profits (rupees) for each of the strategies of three events (expected sales). This is represented in the following table:

Strategies	States of Nature		
	N1	N2	N3
S1	7,00,000	3,00,000	1,50,000
S2	5,00,000	4,50,000	0
S3	3,00,000	3,00,000	3,00,000

Which strategy should the concerned executive choose on the basis of:

(i) Maximin criterion, (ii) Maximax criterion, (iii) Minimax regret criterion, (iv) Laplace criterion, (v) Hurwicz criterion with the co-efficient of optimism as 0.4. $2 + 2 + 6 + 2 + ($

(d) (i) What are the salient features of a project?
(ii) How PERT differs from CPM?
(iii) From the information provided in the following table, draw out the network diagram and find the critical path. How long the project will take to be completed?

Activity	Predecessors	Duration (Days)
A	----	6
B	A	4

C	B	7
D	A	2
E	D	4
F	E	10
G	—	2
H	G	10
I	J, H	6
J	—	13
K	A	9
L	C, K	3
M	I, L	5

5 + 4 + 9

(e) From the following balances extracted from the books of Agni Co., **prepare a trading account, a profit and loss account** for the year ending 31st December, 2016, and a **balance sheet** as on 31st December, 2016.   **6 + 6 + 6**

	Rs.		Rs.
Stock on 1st January, 2016	11,000	Returns outwards	500
Bills receivables	4,500	Trade expenses	200
Purchases	39,000	Office fixtures	1,000
Wages	2,800	Cash in hand	500
Insurance	700	Cash at bank	4,750
Sundry debtors	. 30,000	Tent and taxes	1,100
Carriage inwards	800	Carriage outwards	1,450
Commission (Dr.)	800	Sales	60,000
Interest on capital	700	Bills payable	3,000
Stationary	450	Creditors	19,650
Returns inwards	1,300	Capital	17,900

The stock on 31st December, 2016 was valued at Rs.25,000.

(f) From the following list of transactions prepare appropriate journal entries, ledger entries and the relevant month- end trail balance of Indra Company: **3 x 4 + 6**

(i) Indra started a business with Rs.180 trillion in capital on 01/04/2016.

(ii) Purchased building properties (Fixed Assets) for Rs. 300 billion on credit on 10 / 04 / 2016

(ii) Purchased furniture Furniture of Rs.60 billion in cash on 15 / 04 / 2016.

(iii) Purchased inventories from M/S Vishwakarma for trading on 20 / 04 / 2016 of Rs.1.2 trillion in cash.

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