Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (R,S) (FT/WP/PT)/(S3 PT) Examination November 2025 (2019 Scheme)

Course Code: HUT310

Course Name: MANAGEMENT FOR ENGINEERS

Max. Marks: 100 Duration: 3 Hours

(Use of Normal Distribution Tables may be permitted)

PART A

(Answer all questions; each question carries 3 marks) Marks

1	What are human skills, and how do they contribute to effective team management? Describe with one example.	3
2	How does the systems approach view an organization as an open system? Provide one characteristic.	3
3	Differentiate between directing and controlling functions of management.	3
4	Explain the difference between intrinsic and extrinsic motivation.	3
5	Define decision making under certainty, risk, and uncertainty.	3
6	Differentiate between productivity and production.	3
7	Define project management.	3
8	Explain redundancy error in a network diagram.	3
9	Define human resources management and list its significance.	3
10	Explain the types of intellectual property (copyright, trademark, patent).	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

11 a) Describe Fayol's 14 principles of management, highlighting their significance in modern organizational contexts. 14

12 a) Describe the key findings of Elton Mayo's Hawthorne experiments. 7

b) Describe the key tasks and responsibilities of a manager in an organizational context. 7

Module -2

13 a) Compare transactional and transformational leadership theories. 7

b) Discuss the types of control (feedforward, concurrent, feedback) and their applications with examples for each type. 7

14 a) Compare and contrast strategic, tactical, and operational planning levels. 7

b) Discuss the factors influencing span of control of a manager. 7

Module -3

15 a) A manufacturing company produces 120 units per machine per hour. Currently, they operate 5 machines for 8 hours a day. If they introduce a new technology that increases production to 130 units per machine per hour, what is the impact on productivity (measured in units per hour)? What is the growth in productivity? 8

b) Explain the differences between partial and total productivity measures, providing examples. 6

16 a) A retailer considers two pricing strategies for a new product: Premium (high price) and Discount (low price). Customer response may be positive or negative. 7

Alternatives	Nature of Events	
	Positive Response	Negative Response
Premium Strategy	8,00,000	3,00,000 (Loss)
Discount Strategy	6,00,000	2,00,000 (Loss)

Customer Response Probabilities:

- Positive: 0.6

- Negative: 0.4

Construct a decision tree and suggest a decision to maximize profits.

b) Describe the decision-making process, highlighting its stages and importance in management. 7

Module -4

17 a) You have the following list of activities with their durations and dependencies: 10

- Draw the network diagram for the activities.
- Calculate the early start (ES) and early finish (EF) times for each activity.
- Calculate the late start (LS) and late finish (LF) times for each activity.
- Identify the critical path of the project
- Calculate the project duration.

Activity	Predecessors	Duration
A	-	2
B	A	3
C	A	4
D	B, C	5
E	C	2
F	D, E	3
G	D	4
H	F, G	6
I	H	2

b) Describe the calculation of expected time in PERT with an example. 4

18 a) Consider the following table summarizing the details of a project. 10

Activity	Predecessors	Duration in Weeks		
		O	M	P
A	-	2	4	6
B	A	1	3	5
C	A	2	4	6
D	B	2	3	4
E	B	3	6	9
F	C	2	4	6
G	D, E	4	6	8
H	F	3	5	7
I	G, H	2	3	4

1. **Draw the project network diagram.**
2. **Calculate the expected duration and variance** for each activity using the PERT method.
3. **Determine the critical path** and calculate the expected project completion time.
4. If the project manager wants to complete the project in 23 weeks, **calculate the probability** of achieving this target.

b) List the applications of CPM in project management. 4

Module -5

19 a) Define Operations Management. Describe the scope of operations management. 7

b) Describe the various concepts of marketing. 7

20 a) Explain the characteristics of an entrepreneur. 7

b) Highlight the positive aspects of Intellectual Property (IP) rights. 7

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