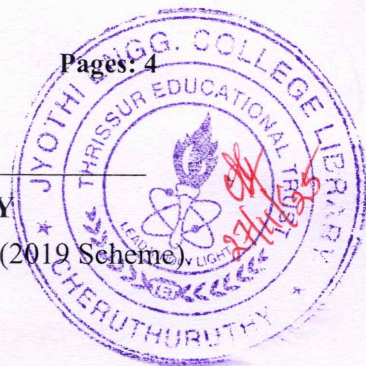


Reg No.: _____

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
