Register No.: .... Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIFTH SEMESTER B.TECH DEGREE EXAMINATION (S), FEBRUARY 2023
COMMON TO EC,EE
(2020 SCHEME)

Course Code:　　**20HUT310**

Course Name:　　**Management for Engineers**

Max. Marks:　　**100**　　　　　　　　　　　　　　　　**Duration: 3 Hours**

Use of statistical table is permitted

PART A
(Answer all questions. Each question carries 3 marks)

1. Why Management is called an Art and Science?
2. What are the different levels of management? Explain.
3. Planning is looking ahead and controlling is looking back. Comment with suitable examples.
4. Distinguish between plan, goal and procedure.
5. Why decision making is difficult task? (any three reasons)
6. How can we improve the productivity of an organization?
7. If there are 5 activities A, B, C, D and E such that A, B, C has no immediate predecessors, but D and E have predecessors A, B and B, C respectively. Represent the activities by means of a network diagram?
8. Using beta distribution, explain the three time estimates related to PERT.
9. "Operations management is process of planning, organizing and controlling the activities of a production function". Explain.
10. What are intellectual property rights?

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

MODULE I

11. a) Explain the 14 principles of administrative management. (10)
    b) Draw Mc Kinsey 7-S frame work. (4)

OR

12. a) Discuss the contributions of F.W Taylor in management. (10)
    b) Describe the roles of Manager. (4)

MODULE II

13. a) What are the different types of planning? Explain. (10)
    b) Explain Directing. (4)

OR

14. Write short notes on
    (i)   narrow span of management
    (ii)   wide span of management and   (14)
    (iii)   line and staff approach in management.

MODULE III

15. a) Long beach Bank employs three loan officers, each working eight   (10)
       hours per day. Each officer processes an average of five loans per
       day. The bank's payroll cost for the officers is ₹820 per day, and
       there is a daily overhead expense of ₹500.
       i.   Compute the labour productivity.
       ii. Compute the multifactor productivity using loans per rupees
            cost as the measure.
    The bank is considering the purchase of new computer software for
    the loan operation. The software will enable each loan officer to
    process eight loans per day, although the overhead expense will
    increase to ₹550.
       i.   Compute the new labour productivity.
       ii. Compute the new multifactor productivity.
    Should the bank proceed with the purchase of the new software?
    Explain.

    b) Write short note on decision making under risk.   (4)

OR

16. a) A cell phone manufacturer has invented a 3D phone. The company   (10)
       wants to take decision whether to manufacture the phone, take
       royalty from another manufacturer, or sell rights of the invention
       and take a lump sum amount of ₹50,000. The profits associated
       and probability of these alternatives is given in the table below.
       Represent the problem as a decision tree and suggest a decision to
       maximise profits.

Demand	Manufacture the phone		Take royalty	
	Probability	Profit (₹)	Probability	Profit (₹)
High	0.25	2,00,000	0.25	60,000
Medium	0.4	50,000	0.4	40,000
Low	0.35	-10,000	0.35	20,000

    b) Explain decision making process.   (4)

MODULE IV

17. a) Explain the concept of crashing.   (4)
    b) Following table lists the jobs of a network along with their time
       estimates.   (10)

Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8
t_0	3	2	6	2	5	3	3	1	4
t_m	6	5	12	5	11	6	9	4	19
t_p	15	14	30	8	17	15	27	7	28

    i. Draw the network.
    ii. Tabulate for each activity the event times and slack values.
    iii. Determine the critical path and project completion time.

OR

18. a) The following table shows the precedence requirements, normal (10) and crash times, and normal and crash costs for a project. The indirect costs are ₹ 70/day.

Activity	Required time (days)		Cost (₹)	
	Normal	Crash	Normal	Crash
1-2	8	6	100	200
1-3	4	2	150	350
2-4	2	1	50	90
2-5	10	5	100	400
3-4	5	1	100	200
4-5	3	1	80	100

    i. Draw the network.
    ii. Determine the critical path.
    iii. Determine the optimal duration and the associated cost after crashing.

    b) Differentiate between CPM and PERT. (4)

MODULE V

19. a) What is meant by market segmentation? Explain the process of (10) market segmentation. Also explain the different types of market segmentation.
    b) Explain Corporate Social Responsibility. (4)

OR

20. a) What is Human Resource Management? What are the functions of (10) HRM? Also explain the selection process in human resource management.
    b) Explain Entrepreneurship. (4)

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