AR16

CODE: 16OE3041 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

MANAGEMENT INFORMATION SYSTEMS

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	Define system. Elaborate different kinds of systems		14M
		(OR)	
2.	a)	Demonstrate the various types of Information	7M
	b)	Discuss about the Dimensions of Information	7M

UNIT-II

3.	Compare the following:		14M
	(i) Digital computers	(ii) Analog computers	(iii) Hybrid computers
		(OR)	
4.	Discuss the different generations of computers.		14M

UNIT-III

5.	Define Communication network? Discuss about Communication Networks		14M
		(OR)	
6.	What is the need of Communication Channel? Elaborate characteristics of Communication Channels.		14M

UNIT-IV

7.	Briefly explain the stages involved in SDLC (water fall) model.		14M
		(OR)	
8.	a)	Compare “decision and a decision making process”	7M
	b)	Explain a few applications of e-commerce.	7M

UNIT-V

9.	Outline the evolution of IS planning by Mr. Nolan?		14M
		(OR)	
10.	a)	Justify how IT turned into one room to whole IT sector	7M
	b)	Sketch the Gantt chart for a engineering project for the duration of	7M

AR16

CODE: 16OE3043 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

SPECIAL MACHINES

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Draw the cross sectional view of switched reluctance motor and explain the operation of Switched reluctance motor?	10M
	b)	State the advantages of Switched reluctance motor?	4M
		(OR)	
2.	a)	Explain different power converter configurations for Switched reluctance motor	10M
	b)	What are the applications of Switched reluctance motors?	4M

UNIT-II

3.	a)	Explain the operation of stepper motor?	7M
	b)	Explain the working of hybrid stepper motor with neat diagrams?	7M
		(OR)	
4.	a)	Explain Open loop and Closed loop control of stepper motor?	10M
	b)	Explain the applications of stepper motor	4M

UNIT-III

5.	a)	Explain operation of brushless dc motor as variable speed synchronous motor?	10M
	b)	Explain the applications of BLDC motor?	4 M
		(OR)	
6.	a)	What are the advantages and disadvantages of brush less dc motors compared to ordinary brush dc motors?	7M
	b)	With a neat block diagram, explain the closed loop control of a BLDC motor.	7M

UNIT-IV

7.	a)	Explain the principle and operation of Linear induction motor?	10M
	b)	Explain the applications of Linear induction motor?	4M
		(OR)	
8.	a)	Write short notes on torque equation of permanent magnet brushless D.C. Motor?	8M
	b)	Explain the significance of B-H characteristics of a permanent magnets	6M

UNIT-V

9.	a)	Explain the Operation of AC series motor?	7M
	b)	Compare the AC and DC traction systems?	7M
		(OR)	
10.	a)	What is the selection criterion of motors for electric traction application? Explain	8M
	b)	What kinds of ac motors are more suitable for traction application?	6M

AR16

CODE: 16OE3044 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

INTRODUCTION TO AUTOMOBILE ENGINEERING

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	What are the components of automobile?	4M
	b)	Explain the role of lubrication system in an automobile.	10M
		(OR)	
2.	a)	Give classification of Internal Combustion engines.	4M
	b)	What is the difference between front wheel and rear wheel drive?	10M

UNIT-II

3.	a)	What is the function of simple carburettor?	4M
	b)	Explain the working principle of simple carburettor with a neat sketch.	10M
		(OR	
4.	a)	What are the requirements of diesel injection systems?	4M
	b)	Explain the function fuel injection pump in a diesel engine.	10M

UNIT-III

5.	a)	Explain the reason for cooling of an engine.	4M
	b)	Explain the working of thermo siphon cooling system.	10M
		(OR)	
6.	a)	What are the functions of ignition systems in automobile?	4M
	b)	Give the detailed account of the magneto ignition system. Illustrate your answer with neat sketch?	10M

UNIT-IV

7.	a)	What is meant by recharging battery? When and how is the battery recharged?	4M
	b)	What is the necessity of generator output control? Discuss various methods of achieving the same.	10M
		(OR)	
8.	a)	What is the function of gear box? Classify	7M
	b)	What is the importance of differential in an automobile?	7M

UNIT-V

9.	a)	What is the role of steering in automobile?	4M
	b)	Sketch and explain Ackermann steering gear mechanism.	10M
		(OR)	
10.	a)	What is the objective of suspension system?	4M
	b)	What are the requirements of brake fluid?	10M

AR16

CODE: 16OE3045 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

BASICS OF VLSI

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain the fabrication of CMOS transistor with the help of neat sketches in P-Well process.	7M
	b)	Discuss the steps involved in nMOS technology.	7M
		(OR)	
2.	a)	What is meant by twin-tub process and explain briefly	7M
	b)	How n-p-n transistor is fabricated in bipolar process?	7M

UNIT-II

3.	a)	Draw and explain static transfer characteristics of CMOS inverter?	7M
	b)	Obtain the ratio between Z_{PU} and Z_{PD} for an nMOS inverter driven through one or more pass transistors	7M
		(OR)	
4.	a)	Deduce the equation for drain current in saturation region	7M
	b)	Give the alternate forms of pull-up in CMOS	7M

UNIT-III

5.	a)	Explain the Design rules for wires	7M
	b)	Design lay-out diagram for inverter using NMOS logic	7M
		(OR)	
6.	a)	Explain steps in VLSI design flow.	7M
	b)	Design stick diagram for the NAND gate using CMOS logic.	7M

UNIT-IV

7.	a)	Give limitations of scaling?	7M
	b)	Derive the scaling factors for Ag ,Cg, R_{on}, T_d ,E_g device parameters	7M
		(OR)	
8.	a)	Derive the Cox, Qon, Fo, Pa, Pt scaling factors for device parameters	7M
	b)	Explain scaling of MOS circuits. Give merits and demerits of scaling.	7M

UNIT-V

9.	a)	Define fan-in and fan-out. Explain their effects on propagation delay?	7M
	b)	Define and explain the standard unit of sheet resistance Rs?	7M
		(OR)	
10.	a)	Define and explain the standard unit of capacitance?	7M
	b)	Explain the choice between the layers to route data and control signals.	7M

AR16

CODE: 16OE3046 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

SIMULATION AND MODELING

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Compare the continuous and discrete systems	7M
	b)	Explain about Static and Dynamic physical models with suitable examples	7M
		(OR)	
2.	a)	Illustrate the model of simulation study	7M
	b)	Find the Advantages, Disadvantages and Pitfalls of Simulation	7M

UNIT-II

3.	a)	Contrast between Analytical and Simulation methods	5M
	b)	Give the detailed theory about Cobweb model	9M
		(OR)	
4.	a)	Extend the Monte-Carlo Method with examples	9M
	b)	Classify the types of system simulation	5M

UNIT-III

5.	a)	Construct exponential growth model for population system	7M
	b)	Develop System Dynamic Diagrams for a system model	7M
		(OR)	
6.	a)	Explain about the Discrete and continuous probability functions	9M
	b)	Construct the Logistic curves of the system model	5M

UNIT-IV

7.	a)	Demonstrate the Poisson Arrival Patterns with a suitable examples	9M
	b)	Elaborate the Service times and Queuing disciplines	5M
		(OR)	
8.	a)	Describe the Normal and exponential distribution	7M
	b)	Define the Queuing theory	7M

UNIT-V

9.	a)	Elaborate the simulation software GPSS	7M
	b)	Demonstrate the organization of SIMSCRIPT program	7M
		(OR)	
10.	a)	Define Action times, Succession of events	7M
	b)	What are the conditional transfers of SIMSCRIPT	7M

AR16

CODE: 16OE3047 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech. II Semester Supplementary Examinations, July, 2019

SOFT COMPUTING

(Open Elective – IV)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Define fuzzy set. Explain various fuzzy set operations with example. 7M

   b) A and B be two fuzzy sets on universe of discourse X. 7M
   X={x1,x2,x3,x4}
   A={(x1,0.3),(x2,0.7),(x3,0.5),(x4,0.1)}
   B={(x1,0.2),(x2,0.5),(x3,0.6),(x4,0.8)}
   Find $A \cup B$, $A \cap B$, A^c, B^c and show that $(A^c)^c = A$.

(OR)

2. a) Distinguish between crisp set operations and fuzzy set operations with suitable example. 7M

   b) Explain different types of membership functions with example. 7M

UNIT-II

3. a) Define fuzzy relations. Explain about IF-THEN rules with example. 7M

   b) Explain various fuzzy operations on relations with example. 7M

(OR)

4. a) Explain the working of fuzzy inference system in detail. 7M

   b) Apply Generalized Modus Ponens to find rotation is quite slow given that, 7M
   i. If temperature is high then rotation is slow.
   ii. Temperature is very high.
   Let X= {30, 40, 50, 60, 70, 80, 90, 100} and Y= {10, 20, 30, 40, 50, 60} where X is set of temperatures and Y is set of rotations per minute.
   The fuzzy sets High(H), Very High(VH), Slow(S) are given below,
   H= {(70, 1), (80, 1), (90, 0.3)}
   VH= {(80,0.6), (90,0.9), (100,1)}
   S= {(30, 0.8), (40, 1), (50, 0.6)}

UNIT-III

5. a) What are the different genetic algorithm strategies? 7M

   b) Define evolution and describe its behaviour briefly? 7M

(OR)

6. a) Explain briefly about genetic algorithms and its types? 7M

   b) What is simulated annealing? Explain in detail. 7M

UNIT-IV

7. a) Compare biological neuron and artificial neuron. 7M

   b) Explain artificial neural networks and advantages of ANN. 7M

(OR)

8. a) What is the structure of neuron and artificial neural network? Explain in detail. 7M

   b) How many types of Artificial Neurons. Explain briefly. 7M

UNIT-V

9. a) Write short notes on Competitive Learning Networks 7M

   b) Explain Kohonen Self organizing Networks. 7M

(OR)

10. a) Distinguish Supervised and Unsupervised Learning Neural Networks? 7M

    b) Distinguish Biological Neural Networks and Artificial Neural Networks? 7M

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AR13

CODE: 13CE3018 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEM SUPPLEMENTARY EXAMINATIONS, JULY, 2019

TRANSPORTATION ENGINEERING – II
(CIVIL ENGINEERING)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1 a) The load value of standard crushed stone for 2.5mm and 5mm penetration in CBR test is

b) Briefly explain Temperature stress?

c) Define the Relative stiffness of slab is?

d) What are the failures observed in Flexible pavement?

e) Rage of Thickness of bitumen carpet?

f) What are social benefits in transportation system?

g) What are the objectives of master plan for airport as per FAA?

h) What are traffic Factors Affecting the Road User Cost?

i) Explain the functions of sleepers?

j) Explain different Combination of stresses?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2 a) Explain typical layers of a flexible pavement with neat sketch? 8m

b) Find ESWL at depths of 5cm, 20cm and 40cm for a dual wheel carrying 2044 kg each. The center to center tyre spacing is 20cm and distance between the walls of the two tyres is 10cm. 4m

(OR)

3 a) Enumerate design criteria The flexible pavements? 7m

b) List the step by step procedure for design of dowel bars? 5m

AR13

CODE: 13CE3018 **SET-2**

UNIT-II

4.	a)	Inspecting the type of Failures of occur in flexible pavements?	6m
	b)	Outline the various equipment used for the excavation of the sub-grade.	6m
		(OR)	
5.	a)	Write procedural steps in Rehabilitation of Pavements and its advantages?	6m
	b)	Comparison of the WBM and WMM road construction?	6m

UNIT-III

6.	a)	Briefly discussed varies methods of economic evaluation of highway projects?	6m
	b)	Comparison of varies methods of economic evaluation of highway projects.	6m
		(OR)	
7.	a)	Basic Concepts of Economic Analysis?	4m
	b)	What are benefit component in transportation system?	8m

UNIT-IV

8.	a)	List the factors theoretically influence the choice of the gauge?	6m
	b)	Explain various types of signals used in railways?	6m
		(OR)	
9.	a)	Explain functions of rails in a track?	6m
	b)	Define and Explain Creep?	6m

UNIT-V

10.	a)	List out elements in a typical airport system for planning process?	5m
	b)	What are the factors affecting selection of site for Air ports	7m
		(OR)	
11.	a)	Explain Runway lighting system.	7m
	b)	Explain the wind rose diagram for orientation of runway?	5m

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AR13

CODE: 13ME3025 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEM SUPPLEMENTARY EXAMINATIONS, JULY, 2019

AUTOMOBILE ENGINEERING
(Mechanical Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is a live axle?
   b) What is the most favourable condition for formation of NOx?
   c) What is the function of Choke in carburettor?
   d) What is the effect of high injection pressure?
   e) What is the effect of overcooling?
   f) What is the use of contact breaker?
   g) What is the purpose of the alternator?
   h) What is the difference between torque converter and fluid coupling?
   i) What do you understand by the term sprung mass? Name them
   j) What are the brake fluid requirements?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) What is crankcase ventilation? Why it is used? Explain one method.
   b) Give the classification of automobiles.

(OR)

3. a) What are the various methods to control NOx? Explain one method in detail.
   b) Why emission standards are mandatory? Explain the method used to determine the emissions from a vehicle.

UNIT-II

4. a) Explain the Simple carburettor with neat sketch.
   b) Discuss electrical fuel pump in detail with a neat sketch.

(OR)

5. a) Illustrate with possible sketches the importance of spray formation.
   b) What are the requirements of diesel injection system.

UNIT-III

6. a) Explain radiator cooling system with a neat sketch.
   b) What is antifreeze? Discuss pressure sealed cooling system.

(OR)

7. a) Explain magneto ignition system with a neat sketch.
   b) Give constructional details of battery, condenser, contact breaker points and auto transformer

UNIT-IV

8. a) Explain bendix drive mechanism with a neat sketch.
   b) Explain horn with a neat wire diagram.

(OR)

9. a) Discuss 3-speed constant mesh gear box with a neat sketch
   b) Give the constructional details of a tyre.

UNIT-V

10. a) Explain modern steering system with a neat sketch.
    b) Explain modern suspension system with a neat sketch

(OR)

11. a) Explain the braking system that is used in heavy commercial vehicles with a neat sketch.
    b) What is the braking system used in passenger cars? Explain in detail.

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AR13

CODE: 13CS3024 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July, 2019

SOFTWARE PROJECT MANAGEMENT

(Computer Science & Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is a vision statement?
   b) Compare rework and adaptability
   c) What are minor milestones?
   d) Define Round trip engineering.
   e) Differentiate MTBF and Maturity.
   f) Categorize top five principles of modern process.
   g) How do you elicit stake holder requirements?
   h) Define the terms task and activity in a project management
   i) Define Change Management.
   j) What is meant by product release milestones?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Explain the major activities carried out by Software Project Management in detail. 6M
   b) What are the reasons for the failure of Waterfall model? Explain the five necessary improvements in waterfall model. 6M

(OR)

3. a) Briefly discuss about the three generations of software economics 6M
   b) Describe about peer inspections. 6M

UNIT-II

4. a) Describe Return on Investments (ROI) with suitable examples in different domains. 6M
   b) List and explain various software effort estimation techniques. 6M

(OR)

5. a) What are Principles of Modern Software Management? Discuss 6M
   b) What are the skills required for Project manager? Explain 6M

UNIT-III

6. a) How to improve software processes? Explain 6M
   b) What are primary objectives and essential activities of (i) Elaboration Phase (ii) Construction phase. 6M

(OR)

7. a) Discuss about model based architecture in management perspective 6M
   b) Write Short notes on(i) Software process workflows (ii) Iteration workflows 6M

UNIT-IV

8. a) Discuss about the questions that cannot be answered by most project teams that use conventional WBS. 6M
   b) Describe the typical minor milestones in the life cycle of iteration. 6M

(OR)

9. a) Explain in detail about planning guidelines. 6M
   b) What are the activities of software assessment team? Elucidate 6M

UNIT-V

10. a) Write a Short note on (i) Tailoring the Process (ii) Process discriminates. 6M
    b) What are the seven core metrics in managing a modern process? Explain 6M

(OR)

11. a) Write Short notes on (i) Quality indicators (ii) Management indicators 6M
    b) Explain about CCPDS-R in detail. 6M

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