AR16

CODE: 16OE3041 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

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 MIS. Discuss the Nature, scope and importance of MIS 14M

(OR)

2. Illustrate different types of MIS. Discuss about the most advanced type? 14M

UNIT-II

3. a) Discuss the features of relational DBMS 7M
   b) What are the different types of database structures .Explain with diagram 7M

(OR)

4. With a block diagram, illustrate the computer hardware system 14M

UNIT-III

5. Explain about Communication Hardware components. 14M

(OR)

6. Define Communication Channel. Describe the characteristics of Communication Channels. 14M

UNIT-IV

7. a) Differentiate between e-commerce and e-business. 7M
   b) Discuss a few applications of e-commerce. 7M

(OR)

8. a) Differentiate between a “decision and a decision making process” 7M
   b) Illustrate Simon’s Model of decision making. 7M

UNIT-V

9. Summarize the need of information system? 14M

(OR)

10. Describe the evolution of IS planning by Mr. Nolan? 14M

AR16

CODE: 16OE3042 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

NATURAL DISASTER MANAGEMENT

(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 disaster Management cycle	7M
	b)	Write Disaster characteristics	7M
		(OR)	
2.	a)	Explain the types of disaster in a Global view	7M
	b)	Explain causes and efforts of disasters	7 M

UNIT-II

3.	a)	Write the causes of natural disaster	7M
	b)	Explain Distribution pattern of Natural Disasters.	7M
		(OR)	
4.		Write Mitigation measures for Cyclone, Floods, Droughts	14M

UNIT-III

5.		Write the community based disaster Preparedness Plan	14M
		(OR)	
6.		Write what are the Roles and Responsibilities of Different Agencies and Government	14M

UNIT-IV

7.		Explain Mitigation action plan	14M
		(OR)	
8.		Write Role of Team and Coordination of mitigation	14M

UNIT-V

9.		Write Role of various Agencies in Disaster Management and development	14M
		(OR)	
10.		Write about long term Counter disaster planning and constraints in Monitoring and evaluation	14M

AR16

CODE: 16OE3043 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

SPECIAL MACHINES

(Open Elective – IV)

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

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

UNIT-I

1.	a)	Discuss the torque production mechanism in switched reluctance motors?	7M
	b)	Discuss the basic principle of switched reluctance motors?	7M
		(OR)	
2.	a)	Derive the relationship between inductance and reluctance?	7M
	b)	Define the terms pole arc and pole pitch?	7M

UNIT-II

3.	a)	Describe constructional aspects of stepper motor?	7M
	b)	What are hybrid Stepper Motors? Explain.	7M
		(OR)	
4.		What is the main principle of operation of a stepper motor? Discuss different models of excitation of stepper motors?	14M

UNIT-III

5.	a)	What are the advantages of BLDC motors over AC motors?	7M
	b)	Explain the operating principles of brushless DC motor with the help of diagrams?	7M
		(OR)	
6.	a)	Explain the theory of brushless DC motor as variable speed synchronous motor?	7M
	b)	Mention the different applications of BLDC motors?	7M

UNIT-IV

7.	a)	What are linear motors? Give their applications?	7M
	b)	Explain the principle of operation of Linear Induction Motor?	7M
		(OR)	
8.		What are the advantages and disadvantages of linear induction motor compare to conventional induction motor and also list out the application of linear induction motor?	14M

UNIT-V

9.	a)	What are the different types of AC motors suitable for electric traction? Explain the reason for selection of the motor?	7M
	b)	Explain clearly single sided linear induction motor for traction drive application.	7M
		(OR)	
10.	a)	Give a detailed comparison between Ac traction and DC traction?	7M
	b)	List the main properties of traction drive?	7M

AR16

CODE: 16OE3044 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

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)	Classify automobile engines in at least nine aspects.	8M
	b)	Explain any two types of oil pumps.	6 M
		(OR)	
2.	a)	Explain about transmission system in an automobile with a line diagram.	8 M
	b)	Explain front and rear wheel drives in an automobile.	6 M

UNIT-II

3.	a)	Explain gravity and pressure fuel feed systems in petrol engines	6 M
	b)	Explain the working of Mechanical pump used in fuel supply system of SI engines with a neat diagram.	8 M
		(OR)	
4.		Explain the working and main functions of a simple Carburettor with a neat diagram.	14 M

UNIT-III

5.	a)	Explain Thermo syphon water cooling system with a neat diagram	10 M
	b)	List any four advantages of air cooling system	4 M
		(OR)	
6.	a)	Explain battery ignition system with a neat diagram.	10 M
	b)	List any four disadvantages of over cooling	4 M

UNIT-IV

7.		Label the components of a charging circuit in a diagram and explain the working of any five components of charging system in an automobile	14 M
		(OR)	
8.	a)	Explain sliding type gearbox with a neat diagram	10 M
	b)	Explain the working of a clutch in an automobile	4 M

UNIT-V

9.	a)	Explain Ackermann steering mechanism with a neat diagram	10 M
	b)	List any three objectives of suspension system	4 M
		(OR)	
10.		Explain the construction and working of a Hydraulic Braking System with a neat diagram	14 M

AR16

CODE: 16OE3047 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

SOFT COMPUTING
(Open Elective)

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

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

UNIT-I

1.	a)	What is Soft Computing? Classify the various applications in Soft Computing?	(6M)
	b)	Explain various membership Function operations in Fuzzy system.	(8 M)
		(OR)	
2.	a)	Compare difference between crisp set and fuzzy set.	(6M)
	b)	Explain the characteristics of Soft computing and Hard computing?	(8M)

UNIT-II

3.	a)	What is Fuzzy inference system?	(6M)
	b)	Compare fuzzification and defuzzification.	(8M)
		(OR)	
4.	a)	Define if then rules and how it helps in real time explain with example.	(7M)
	b)	Write notes on fuzzy reasoning.	(7M)

UNIT-III

5.	a)	Explain briefly about Genetic algorithms and its types?	(8M)
	b)	Describe Genetic algorithm strategies?	(6M)
		(OR)	
6.	a)	Explain Simulated Annealing.	(6M)
	b)	Explain Genetic algorithm using back propagation.	(8M)

UNIT-IV

7.	a)	Give a detailed description on various learning techniques.	(6M)
	b)	Explain Radial Basis Function Networks.	(8M)
		(OR)	
8.	a)	Explain about neural network with architecture.	(6M)
	b)	Explain Back propagation multilayer perceptron.	(8M)

UNIT-V

9.	a)	Give a detailed description of Competitive Learning Networks.	(7M)
	b)	Distinguish Supervised and Unsupervised Learning Neural Networks?	(7M)
		(OR)	
10.	a)	What is Learning Vector Quantization and explain with architecture.	(6M)
	b)	Describe the Artificial Neural Networks and explain the process of ANN.	(8M)

AR13

CODE: 13CE3018 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021
TRANSPORTATION ENGINEERING – II
(Civil Engineering)

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

PART-A

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

1. a) Main drawback of 'CBR' method is?
   b) Define super elevation.
   c) What are Critical loading positions of the pavement?
   d) List the type failure observed in Rigid pavement?
   e) Explain reasons of longitudinal cracking are?
   f) Road user cost decided based on which code?
   g) What are Roadway Factors Affecting the Road User Cost?
   h) What are the reasons of Structural failures Air field pavement failures?
   i) What is prime coat in flexible pavements?
   j) What is the formula for Length of the tie bar?

PART-B

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

UNIT-I

2 a) Explain the difference between flexible and rigid pavements? 6m

b) Design size and spacing of dowel bars at an expansion joint of concrete pavement of thickness 25 cm. Given the radius of relative sti ness of 80 cm. design wheel load 5000 kg. Load capacity of the dowel system is 40 percent of design wheel load. Joint width is 2.0 cm and the permissible stress in shear, bending and bearing stress in dowel bars are 1000,1400 and 100 kg=cm^2 respectively. 6m

(OR)

3 a) Enumerate the various design parameters of flexible pavement asper IRC. 6m

b) Shortly explain about the generation of warping stresses in CC pavements. 6m

UNIT-II

4. a) Outline various steps for the construction of concrete pavements: 4m

   b) Briefly explain about surface preparations and asphalt pavement overlays? 8m

(OR)

5. a) Differentiate between WBM and WMM road construction? 6m,

   b) What is an earth road and explain Construction Procedure?

UNIT-III

6. a) What is the total cost of Transportation system? 7m

   b) Explain various stages involved In Economic Evaluation in transportation engineering? 5m

(OR)

7. a) List the factors involved vehicle operating cost (VOC) 4m

   b) Relate EA Method of Cost Analysis and its Applications 8m

UNIT-IV

8.	a)	What are the principal requirements of an ideal permanent way?	6m
	b)	Explain type of gauges in Indian railways and their suitability?	6m
		(OR)	
9.	a)	What are the main functions of sleepers?	4m
	b)	Define the Creep and explain creep Indicators and causes of creep?	8m

UNIT-V

10.		Explain briefly various factors effecting airport site selection.	12m
		(OR)	
11.	a)	Define Runway Configurations and what different types of runways are.	5m
	b)	Explain the wind rose diagram for orientation of runway.	7m

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AR13

CODE: 13ME3025 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT,TEKKALI
(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021
AUTOMOBILE ENGINEERING
(Mechanical Engineering)

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

PART –A

ANSWER ALL QUESTIONS **[1x10=10M]**

1 a). What is meant by four wheel drive?
b). What is the primary objective of lubrication systems?
c). Name the various types of fuel supply systems?
d). What is the purpose of Fuel Injector?
e). Name the various methods of Engine Cooling?
f). Why spark plug was not required in diesel engine?
g). What is the purpose of tandem master cylinder?
h). What is the need of clutch in the automobile?
i). What is a caster and camber angle?
j). Stage the requirements of steering systems?

PART-B

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

UNIT-I

2. With a neat sketch explain clearly the pressure system of lubrication for an automotive engine?

(OR)

3. a) What is crankcase ventilation? How is it achieved in an automobile engine?
b). With the help of neat sketch, explain the construction of an oil strainer?

UNIT-II

4. With the help of neat sketches explain the construction and working of S.U. Electrical fuel pump.

(OR)

5. Discuss the working of a simple single jet carburettor. Explain various defects of such carburettor. How these remedies?

UNIT-III

6. a) Name different methods of engine cooling .Explain in detail the air cooling method?
b) Discuss in detail the water cooling system for automotive engines?

(OR)

7. Discuss the construction and working of the rotating armature type of magneto ignition systems?

UNIT-IV

8. Explain the working of a single plate clutch with the help of simple diagram? What are the limitations of it?

(OR)

9. a). What is an epicyclic gear box? Describe its principle with the help of a neat sketch?
b). What is an Overdrive? Explain its construction and discuss its working, explaining also the method of control?

UNIT-V

10 What is the purpose of independent suspension? Explain various methods to archive the same in front and rear axles of cars. Describe its advantages and disadvantages also, if any, Compared to the conventional rigid axel suspension?

(OR)

11 Draw a simple diagram to show the layout of hydraulic operated four wheel brake system and explain its working in detail?

AR13

CODE: 13CS3017 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

NETWORK SECURITY AND CRYPTOGRAPHY

(Computer Science & Engineering)

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

PART-A

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

1. a) Define authentication.
   b) Encipher the plaintext "Attack Postponed" with a rail fence technique of depth 3.
   c) How to generate message authenticator?
   d) What is the role of KDC in conventional encryption?
   e) What is the maximum ticket lifetime in Kerberos version 4?
   f) List all the PGP services.
   g) Mention the applications of IPSec.
   h) List any three additional alert codes defined in TLS.
   i) What are the limitations of firewalls?
   j) What is the purpose of malicious software's – keyloggers and flooders?

PART-B

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

UNIT-I

2. a) Describe all the X.800 security services. 6M
   b) With examples explain the following attacks: 6M
   i) Session Hijacking ii) IP address Spoofing.

(OR)

3. a) With suitable example explain the cryptanalysis of mono alphabetic cipher using English language frequencies. 6M
   b) Using the key $\begin{pmatrix} 5 & 8 \\ 17 & 3 \end{pmatrix}$ encrypt and decrypt the message "Attack postponed" using Hill cipher. Show calculations. 6M

UNIT-II

4. a) With neat sketches explain DES single round operations. What is the strength of DES? 6M
   b) Describe the encryption process of Blowfish. 6M

(OR)

5. a) Write the description of RSA algorithm. Perform encryption and decryption using RSA algorithm with p=3, q=11, e=7 and M=5. 8M
   b) How to generate hash value using HMAC? 4M

UNIT-III

6.	a)	Write the summary of Kerberos V4 message exchanges.	6M
	b)	List and explain the elements of x.509 certificate revocation list.	6M
		(OR)	
7.	a)	Draw the general format of PGP messages and general structure of PGP public and private key rings.	8M
	b)	With an example explain MIME message structure.	4M

UNIT-IV

8.	a)	What protocols comprise SSL? Discuss the operations of SSL record and handshake protocols.	8M
	b)	Draw and explain the IPSec ESP header format.	4M
		(OR)	
9.	a)	List and briefly define the principal SET participants. Explain the purchase request transaction in SET.	6M
	b)	Write the overview of Oakley key determination protocols.	6M

UNIT-V

10.	a)	How to detect intruders using statistical anomaly detection and rule based intrusion detection techniques?	8M
	b)	Explain the four basic password selection strategies.	4M
		(OR)	
11.	a)	List and explain the phases and types of virus.	6M
	b)	How packet filter firewalls filter the packets? List the attacks and counter measures of packet filter firewall.	6M

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