AR13

CODE: 13CE3018 **SET-1**

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

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

PART-A

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

1. a) Draw a neat sketch of rigid pavement
   b) What are various wheel load stresses in rigid pavement?
   c) Give examples of flexible pavement
   d) Name highway user benefits
   e) What is PSI?
   f) What is AASHTO stands for?
   g) Draw a neat sketch of longitudinal joint
   h) What is a quantifiable benefit of roads?
   i) What are different types of Rails
   j) What is the purpose of Apron?

PART-B

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

UNIT-I

2. a) Write about design wheel load 6M
   b) Write about effect of number of repetitions on pavement design 6M

(OR)

3. a) It is proposed to widen an existing 2-lane NH section to 4-lane divided road. Calculate cumulative standard axle for new carriageway with the following data: 6M
   (i) 4-lane divided carriageway (ii) Initial traffic in each direction = 5500CV/day
   (iii) Design life = 15 years (iV) Design CBR of subgrade soil=4%
   (v) Traffic growth rate= 7% (vi) VDF (from axle load survey) =4.0
   (vii) Distribution factor = 0.75
   b) Write about salient features of AASHO method of pavement design 6M

UNIT-II

4. a) Explain the process of rigid pavement design 6M
   b) Discuss the failures of flexible pavement design 6M

(OR)

5. a) Discuss the process of finding the overlay thickness 6M
   b) Explain the importance of highway drainage 6M

UNIT-III

6. a) Discuss about Benefit-Cost Ratio method 6M
   b) Explain the road user benefits 6M

(OR)

7. a) calculate the annual cost of a stretch of highway from following particulars. 6M

Item	Total cost in crores	Estimated life years	Rate of interest,%
Land	12.0	100	6
Earth work	9.0	40	8
Bridges & culverts	7.5	60	8
Pavement	14.0	15	10

Average annual cost of maintenance of the road is Rs.1.5 crores per year

   b) Discuss about highway financing 6M

UNIT-IV

8. a) Discuss the functions of sleepers 6M
   b) Explain the selection of Gauge 6M

(OR)

9. a) Explain about coning of wheels 6M
   b) Discuss the theories related to creep in rails 6M

UNIT-V

10. a) Explain the factors affecting selection of airport site 6M
    b) Discuss about the corrections for runway length 6M

(OR)

11. a) Discuss about the Windrose diagram 6M
    b) Explain the functions of terminal building 6M

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, October-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 Steganography
   b) Define security threat.
   c) Draw the Fiestel structure.
   d) Summarize the purpose of S-boxes in DES.
   e) Define digital signature.
   f) What is Kerberos?
   g) List the elements of MIME.
   h) Why does ESP apply a padding field?
   i) What are the different types of firewalls
   j) Define Virus

PART-B

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

UNIT-I

2.	a)	List the different types of attacks and explain in detail	6M
	b)	What is mono-alphabetic cipher? demonstrate how it differs from Caesar cipher?	6M
		(OR)	
3.	a)	Describe the Transposition Techniques in detail.	7M
	b)	Write about format string attacks	5M

UNIT-II

4.	a)	Explain the following modes of operation in block cipher. Electronic code book and Cipher block chaining.	6M
	b)	Explain HMAC algorithm	6M
		(OR)	
5.	a)	Analyze how men in middle attack is performed on double Data Encryption Standard.	6M
	b)	Describe RSA Algorithm.	6M

UNIT-III

6.	a)	What are the servers of Kerberos?	6M
	b)	Explain about S/MIME functionality.	6M
		(OR)	
7.	a)	Explain the security services offered by PGP.	6M
	b)	Draw and explain fields of X.509 certificate format.	6M

UNIT-IV

8.		Explain Secure Electronic Transaction with neat diagram.	12M
		(OR)	
9.	a)	Explain the SSL protocols	6M
	b)	Differentiate the packet structure of ESP and AH.	6M

UNIT-V

10.	a)	Compare reactive password checking with proactive password checking	6M
	b)	Explain the Firewall services.	6M
		(OR)	
11.	a)	Illustrate trusted systems.	6M
	b)	Discuss the role of intrusion detection system? What are the three benefits that can be provided by the intrusion detection system?	6M

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