# CODE: 18CET208 SET-1 ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

### (AUTONOMOUS)

II B.Tech II Semester Regular & Supplementary Examinations, September-2021

### MECHANICS OF SOLIDS-II (Civil Engineering)

Time: 3 Hours Max Marks: 60

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) Write the differential equation of flexure. What is flexural 5M rigidity?
  - b) A Cantilever beam of length 6m carries uniformly distributed 7M load of 12mK/m over the whole length. Determine the slope and deflection at the free end. Take E=200 GPa and I=300X 10<sup>-6</sup> m<sup>4</sup>.

### (OR)

2. A simply supported beam 10m long carries point load of 12M 30kN at 7.5 m from the left support. Using moment area method, Determine the deflection under the point load and the maximum deflection. Take flexural rigidity (EI) = 410X10<sup>3</sup> kN-m<sup>2</sup>.

### **UNIT-II**

- 3. a) Find the expression for circumferential stress and longitudinal 5M stress for a longitudinal joint and circumferential joint.
  - b) A cylinder of internal diameter 3m and thickness 6m contains 7M a gas. If the tensile stress in the material is not exceed 70 N/mm<sup>2</sup>, determine internal pressure of the gas.

### (OR)

- 4. a) What do mean by Lame's equations? How will you derive these equations?
  - b) A thick spherical shell of 400 mm internal diameter is 7M subjected to an internal fluid pressure of 1.5 N/mm<sup>2</sup>. If the permissible tensile stresses in the shell material is 3 N/mm<sup>2</sup>, find the necessary thickness of the shell.

### **UNIT-III**

5. Derive the expression for the major and minor principal 12M stresses on an oblique plane, when the body is subjected to direct stresses in two mutually perpendicular directions accompanied by a shear stress.

### (OR)

6. a) Write a short note on Mohr's circle of stresses.

5M

b) An elemental cube is subjected to tensile stresses of 60 7M N/mm<sup>2</sup> and 20 N/mm<sup>2</sup> on two mutually perpendicular planes and shear stress of 20 N/mm<sup>2</sup> on these planes. Draw the Mohr's circle of stresses.

### **UNIT-IV**

- 7. a) What is equivalent length of a column? Give the ratios of 5M equivalent length and actual length of the columns with various end conditions.
  - b) A hallow mild steel tube 5 m long and 4 cm internal and 5 7M mm thick is used as a strut with both ends hinged. Find the crippling load and safe load taking factor of safety as 3. Take  $E = 2 \times 10^5 \text{ N/mm}^2$ .

### (OR)

8. Determine the ratio of buckling strengths of two columns one 12M hallow and other solid. Both are made of the same material and have the same length, cross sectional area and end conditions. The internal diameter of hollow column is 2/3 rd of its external diameter.

# <u>UNIT-V</u>

- 9. a) What are the assumptions made in Rankine's theory of earth 5 M pressure?
  - b) How the Rankine's theory is used to determine the pressure 7 M exerted by the earth on the retaining wall?

### (OR)

10. A Column is rectangular in crossection of 300X400mm in 12 M dimensions. The column carries an eccentric point load of 360kN on one diagonal at distance of quarter diagonal length from a corner. Calculate the stresses at all four corners.

### **CODE: 18EET208**

### SET-1

### ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

II B.Tech II Semester Regular & Supplementary Examinations, September-2021

### **POWER SYSTEMS-I**

(Electrical and Electronics Engineering)

**Time: 3 Hours** Max Marks: 60 Answer ONE Question from each Unit

All Questions Carry Equal Marks All parts of the Questions must answer at one place

### **UNIT-I**

- 1. a) What are the factors effecting the selection of site for thermal power plant? 6M b) Classify hydroelectric power plants? 6M (OR) Draw the layout of typical thermal power plant and explain features of each 12M 2. component? **UNIT-II** Explain main parts of Nuclear reactor with diagrams? 6M 3. a) Explain the working of Boiling water reactor (BWR) with neat sketch and compare b) 6M it with FBR (OR) Distinguish between Flat plate type collectors and Concentrating collectors. 4. a) 6M Illustrate the Principle of operation of Gas Power station with neat sketches. b) 6M **UNIT-III** 5. a) A 2-wire dc distributor, 500m long is fed at one of its ends. The cross sectional 6M
- area of each conductor is 3.4 cm<sup>2</sup> and the resistivity of copper is 1.7  $\mu$   $\Omega$  cm. The distributor supplies 200A at a distance of 300m from the feeding point and 100A at the terminus. Calculate the voltage at the feeding end if the voltage at the terminus is to be 230V.
  - Differentiate A.C. distribution from D.C. distribution?

### (OR)

- Draw the phasor diagrams of a.c. distributor power factor with respect to receiving 6. a) end and with respect to the load voltages itself
  - A two-wire Dc distributor is fed from both ends. At feeding point A, the voltage is b) 6M maintained at 230V and at B 235V. The total length of the distributor is 200m and loads are tapped off as follows: 25A at 50m from A; 50A at 75m from A; 30A at 100m from A; 40A at 150m from A. The resistance per kilometer of one conductor is 0.3. Calculate: (i) currents in various sections of the distributor. (ii) Minimum voltage and the point at which it occurs.

### **UNIT-IV**

- Draw the layout of a typical 33/11kV substation and indicate various components? 7. a) 6M
  - Discuss about the classifications of substations. b)

6M

6M

9.	a)	Discuss Cost of Electrical energy and Explain the expressions for cost of	OIVI
		electrical energy.	
	b)	A generating station supplies the following loads: 15 MW, 12 MW, 8.5 MW, 6	6M
		MW, 0.45 MW. The station has a maximum demand of 22 MW. The annual load	
		factor of the station is 48%. Calculate : 1) the number of units supplied	
		annually 2) diversity factor 3) demand factor	
		(OR)	
10.	a)	Define tariff. Explain different types of tariff.	6M

**UNIT-V** 

6M

6M

Explain different types of gas insulated substations

Distinguish between out-door substations and in-door substations.

8. a)

b)

system.

2 of 2 \*\*\*

b) Draw load curve, Load duration curve and explain its importance in a generation 6M

#### **CODE: 18MET206** SET-1

### ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

II B.Tech II Semester Regular & Supplementary Examinations, September-2021

### **MANUFACTURING TECHNOLOGY -I**

		(Mechanical Engineering)	
Time: 3	Hou		
		Answer ONE Question from each Unit	
		All Questions Carry Equal Marks	
		All parts of the Question must be answered at one place	
		<u>UNIT-I</u>	
1.	a)	Discuss the steps involved in making a casting.	8M
	b)	What are pattern allowances? Explain any two.	4M
		(OR)	
2.	a)	Which type of furnaces are suitable for melting of ferrous materials and why? Explain briefly.	8M
	b)	Discuss about elements of gating system.	4M
		<u>UNIT-II</u>	
3.	a)	Discuss oxy-acetylene welding equipment with a neat sketch.	6M
	b)	Bring out the difference between TIG and MIG welding.	6M
	ĺ	(OR)	
4.	a)	Describe the shielded metal arc welding process.	6M
	b)	What is meant by welding defects? Explain any six welding defects.	6M
		<u>UNIT-III</u>	
5.	a)	Differentiate between Hot working and Cold working of metals.	6M
	b)	Derive a formula for length of deformation zone and angle of bite in rolling process.	6M
		(OR)	
6.	a)	Briefly explain about forward extrusion and backward extrusion.	6M
	b)	Briefly explain about wire drawing process with neat sketch	6M
		<u>UNIT-IV</u>	
7	a)	Differentiate between open die forging and closed die forging.	6M
, ·	b)	Explain the drop forging operation and its adayantages.	6M
	- /	(OR)	
8.	a)	What are the different sheet metal operations? Explain any four types.	6M
	b)	Discuss about sheet metal punching and blanking operations.	6M
		<u>UNIT-V</u>	
9.	a)	Discuss about explosive forming process and its applications	6M
,	b)	Discuss about electro hydraulic forming process and its applications	6M
	-,	(OR)	
10.	a)	With the help of suitable sketch explain the blow moulding process. Mention its	6M
		applications.	_

6M

b) What are the properties and applications of plastic?

#### **CODE: 18ECT210** SET-2

### ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

II B.Tech II Semester Regular & Supplementary Examinations, September-2021

### PULSE AND DIGITAL CIRCUITS

		(Electronics and Communication Engineering)	
Time: 3	Hou	rs Max Marl	ks: 60
		Answer ONE Question from each Unit All Questions Carry Equal Marks All parts of the Question must be answered at one place	
		<u>UNIT-I</u>	
1.	a)	Prove by direct Integration that the area under the wave for an input of Pulse	6M
	b)	amplitude V Volts and duration $t = t_p$ for a high pass RC circuit. Draw and obtain the condition for a high pass RC circuit as a Differentiator. (OR)	6M
2.	a) b)	Draw and obtain the response of a pulse input to a Low pass RC circuit.  Draw and explain the operation of attenuator.	6M 6M
	0)	UNIT-II	0111
3.	a)	Draw and explain the operation of double sided clipper through wave forms and	6M
	b)	Transfer characteristics.  Explain the operation of Shunt noise Clipper.	6M
	-,	(OR)	
4.	a)	Obtain the condition for Clamping circuit theorem.	6M
	b)	Design a diode clamper to restore a dc level of +3V to an input signal of peak to peak value of 10Volts with 1KHz. Assuming the drop across the diode is 0.6V.	6M
		<u>UNIT-III</u>	
5.	a)	Draw and explain the storage and transition times of diode.	6M
	b)	Explain how the transistor acts as a Switch.  (OR)	6M
6.	a)	Explain the operation of Bi-stable multivibrator.	5M
	b)	Draw and explain emitter coupled binary as Schmitt trigger circuit.	7M
		<u>UNIT-IV</u>	
7.	a) b)	Derive the expression for time period of transistor Mono-stable.  Explain the collector coupled mono-stable multivibrator and draw its base and collector waveforms.  (OR)	6M 6M
8.		Design an unsymmetrical astable multivibrator using npn transistors for the following specifications $V_{cc}=10V$ , $I_{c(sat)}=4mA$ , $f=12kHz$ , $h_{fe(min)}=30$ and duty cycle=0.35.	12M
		<u>UNIT-V</u>	
9.	a)	Draw and explain the operation of UJT sweep circuit.	8M
	b)	Give the applications of Time base circuits.	4M
		(OR)	4.5.
10.		Draw the circuit and explain the operation of Miller sweep generator and derive the expression for slope error.	12M
		1 of 1	

# **CODE:** 18CST207 **SET-2**

# ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

II B.Tech II Semester Regular and Supplementary Examinations, September, 2021

# DATABASE MANAGEMENT SYSTEMS (Common to CSE & IT)

Time: 3 Hours Max Marks: 60

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

		<u>UNIT-I</u>	
1.	a) b)	Explain in detail the structure of the DBMS system.  Discuss the main characteristics of the database approach and how it differs from traditional file systems.	6M 6M
2.	a) b)	(OR) Discuss the main categories of data models. Describe the three-schema architecture. Why do we need mappings between schema levels? How do different schema definition languages support this architecture	6M 6M
		<u>UNIT-II</u>	
3.	a)	Explain Relational algebra operations from Set Theory and Unary Relational operations with suitable example.	6M
	b)	Explain types of attributes and Constraints on Relationship types in E-R model with example	6M
4.	a)	(OR) Explain additional features of ER model	6M
4.	a) b)	Explain multi valued and functional dependencies?	6M
	-,	<u>UNIT-III</u>	-
5.	a)	Discuss different logical connectives.	5M
	b)	Discuss Set- Comparison Operators.	7M
	,	(OR)	0.5
6.	a) b)	Write short notes on Active Data bases.	6M 6M
	U)	Explain NULL values. <u>UNIT-IV</u>	OIVI
7.	a)	Define 1NF, 2NF & 3NF with an suitable example, illustrate how an unnormalized	6M
/.	a)	table is converted to 2NF.	OIVI
	b)	Discuss insertion, deletion and modification anomalies. Why are they considered bad? Illustrate with examples.	6M
		(OR)	
8.	a)	What is serializability? Explain the types with examples.	6M
	b)	What are the problems faced when concurrent transactions are executed in an uncontrolled manner. Give an example and explain	6M
		<u>UNIT-V</u>	
9.	a)	Write short notes on Buffer Management.	6M
	b)	Explain different types of ordered indices.	6M
10	6)	(OR) Explain Log Pasad Pasayary	61.1
10.	a) b)	Explain Log-Based Recovery.  Explain about the structure of B+ trees.	6M 6M
	٠,		0111

CODE: 16CE2009 SET-1
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

II B.Tech II Semester Supplementary Examinations, September- 2021 STRENGTH OF MATERIALS-II (Civil Engineering)

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) State the condition for the use of Macaulay's Method 7M
  - b) A simply supported beam of length 4 meters carries a 7M uniformly distributed load of 15kN/m throughout its length. Compute the maximum deflection and slope in the beam. Take flexural rigidity EI=25000kN m<sup>2</sup>.

### (OR)

- 2. a) A beam of length 6m is simply supported at its ends over a 7M and carries two concentrated loads of 48kN and 40kN at a distance of 1m and 3m respectively from the left support. Estimate the deflection under the load. Take E=2x10<sup>5</sup>N/mm<sup>2</sup> and I=85x10<sup>6</sup>mm<sup>4</sup>.
  - b) Derive an expression for the slope at the supports of a simply 7M supported beam carrying a point load at the center.

# <u>UNIT-II</u>

3. Derive the expression for the major and minor principal 14M stresses on an oblique plane, when the body is subjected to direct stresses in two mutually perpendicular directions accompanied by a shear stress.

### (OR)

4. At a point in a bracket the stresses on two mutually 14M perpendicular planes are 35 MN/m<sup>2</sup> (tensile) and 15MN/m<sup>2</sup>(tensile). The shear stress across these planes is 9 MN/m<sup>2</sup>. Find the magnitude and direction of the resultant stress on a plane making an angle of 40° with the plane of first stress. Find also the normal and tangential stresses on the planes.

# **UNIT-III**

5.	a)	Derive Lame's expression for radial. Circumferential and longitudinal stresses for a thick cylindrical shells.	7M
	b)		7M
6.	a)	Calculate the minimum wall thickness of a thin cylinder 1 metre in diameter, if it is to withstand an internal pressure of 2 N/mm <sup>2</sup> and	7M
		<ul> <li>i) The longitudinal stress in not to exceed 30 N/mm<sup>2</sup>;</li> <li>ii) The hoop stress in not to exceed 40 N/mm<sup>2</sup>.</li> </ul>	
	b)	What are circumferential and radial stresses?	7M
		<u>UNIT-IV</u>	
7.	a)	Derive the Eulers buckling load for a column with one ends fixed and other end pinned.	7M
	b)	Derive Euler's crippling load for a column both ends are hinged.	7M
		(OR)	
8.	a) b)	Derive buckling load for column with both the ends fixed. Write the application of Euler's theory.	7M 7M
		<u>UNIT-V</u>	
9.	a) b)		7M 7M
10	. a)		7M
10	. a)	rectangular section.	/ 1 <b>V 1</b>
	b)		7M

### **CODE: 16EE2011** SET-1 ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

II B.Tech II Semester Supplementary Examinations, September- 2021

### **POWER SYSTEMS – II**

(Electrical & Electronics Engineering)

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) Clearly explain what do you understand by GMR and GMD of 6 M a transmission line? b) Derive an expression for the inductance per phase for a 3phase overhead transmission line when conductors are 8 M symmetrically placed (OR) Derive an expression for the capacitance of a single phase 2. 6 M transmission line? b) A three phase transmission line has its conductors at corners of an equilateral triangle with side of 3m. The diameter of each 8 M conductor is 1.63cm. Determine the inductance of the line per phase per km **UNIT-II** Explain the classification of transmission lines into short, 6 M 3. medium and long types. An overhead single phase Line delivers 1100KW at 33 kV at 0.9 power factor lagging The total resistance of the line is 10 8 M ohm and the total inductive reactance is 15 ohm. Determine (i) %voltage regulation (ii) sending end power factor (iii) transmission Efficiency? (OR) 4. a) Derive the ABCD parameters of nominal-T circuit for the 6 M medium transmission line b) Explain about the equivalent ' $\pi$ ' model of a long transmission 8 M line?

# <u>UNIT-III</u>

5.	a)	Explain the concepts of incident, reflected and refracted waves in the Transmission lines?	6 M
	b)	Using rigorous method, derive the expression for sending end voltage and current of a Long Transmission line when the receiving end parameters are taken as reference?  (OR)	8 M
6.	a)	What is an equivalent T circuit of a long line? Derive an expression for parameters of this circuit in terms of line parameters	6 M
	b)	Explain the surge impedance with necessary expressions?	8 M
		<u>UNIT-IV</u>	
7.	a)	What is Ferranti effect? Deduce a simple expression for the voltage rise of an unloaded line?	6 M
	b)	What is critical disruptive voltage? Derive the expression for this voltage?	8 M
		(OR)	
8.	<ul><li>a)</li><li>b)</li></ul>	Explain skin effect, proximity effect? Explain the factors that affect the corona loss on an overhead transmission line	6 M 8 M
		<u>UNIT-V</u>	
9.	a)	Explain the construction and operation of suspension type insulators.	6 M
	b)	Each line of a 3-phase system is suspended by a string of 3 similar insulators? If the voltage across the line unit is 17.5 KV. Calculate the line to neutral voltage. Assume that the shunt capacitance between each insulator and earth is 1/8th of the capacitance of the insulator itself? Also find the string efficiency?	8 M
		(OR)	
10	. a)	heights	6 M
	<b>b</b> )	An overhead transmission line has a span of 220m. The conductor weight is 0.6kg/m. Calculate the maximum sag, if ultimate strength of conductor is 5760kg. Assume factor of safety equal to 2?	8 M

# **CODE:** 16ME2011 SET-1

# ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

II B.Tech II Semester Supplementary Examinations, September- 2021

# **MACHINE DRAWING** (Mechanical Engineering)

Time: 3 Hours Max Marks: 70

Note: Answer any two questions from section A and Section B is compulsory

### **Section A**

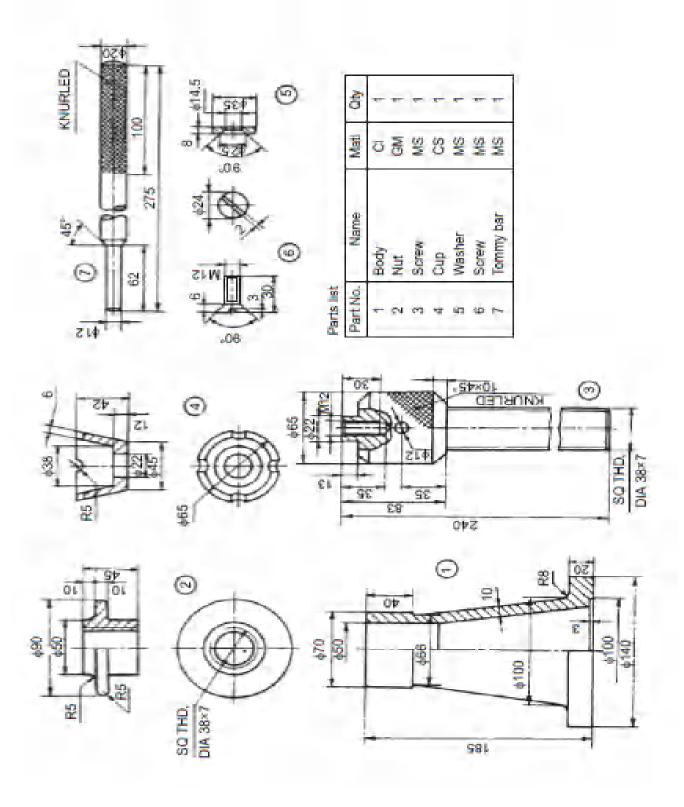
(2x15=30Marks)

- 1. Draw the sectional front view and top view of a double riveted single strap butt joint with zig-zig Riveting. Take the thickness of plates as 20 mm.
- 2. Draw the sectional front view and sectional side view of a Split-muff coupling to connect two shafts of 30 mm diameter.
- 3. Draw a proportionate diagram of solid Journal bearing for a shaft of diameter 25 showing front and top views.

### **Section B**

(1x40=40Marks)

4. Figure gives the detailed drawings of a screw jack. Assemble all the parts and draw the following assembled views. a) Sectional front view b) Top view (40Marks)



**CODE:** 16EC2012 **SET-1** 

# ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

### II B.Tech II Semester Supplementary Examinations, September- 2021 RANDOM VARIABLES AND STOCHASTIC PROCESSES (Electronics and Communication Engineering)

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

		<u>UNIT-I</u>	
1.	a) b)	How do you explain statistically independent events using Baye's rule? Suppose that a laboratory test to detect a certain disease has the following statistics. Let A= event that the tested person has the disease	7
		B= event that the test result is positive. It is known that $P(B/A)$ = 0.99 and $P(B/A)$ = 0.005 And 0.1 percent of the population actually has the disease. What is the probability that a person has the disease given that the test result is positive?	7
		(OR)	
2.	a)	(i) Give Classical and Axiomatic definitions of Probability, and write the axioms of probability	7
	b)	In a certain college. 25% of the students failed mathematics, 15% of the students failed chemistry, and 10% of the students failed both mathematics and chemistry. A student is selected at random.	
		(i) If he failed mathematics, what is the probability that he failed chemistry?	7
		(ii) What is the probability that he failed mathematics or chemistry?	
		UNIT-II	
3.	a)	Define the Distribution function and explain the properties of Distribution function?	7
	b)	Define random variable and give the concept of random variable with an example.	7
		(OR)	
4.	a)	Define and explain the following distribution and densities with an application.	6
	1 \	(i) Gaussian (ii) Uniform	
	b)	A fair die is tossed. Let X denotes twice the number appearing, and let Y denotes 1 or 3 according as an odd or an even number appears. Find the distribution, expectation of (i) X (ii) Y (iii) XY.	8

#### **UNIT-III**

- 5. a) Briefly explain about jointly Gaussian random variables.
  - b) The joint cdf of a bivariate r.v. (X, Y) is given by

$$F_{xy}(x, y) = \begin{cases} (1 - e^{-xx})(1 - e^{-\beta y}) & x \ge 0, y \ge 0, x, \beta > 0 \\ 0 & \text{otherwise} \end{cases}$$

i) Find the marginal cdf's of X and Y. ii) Show that X and Y are independent.

(OR)

- 6. a) Define the joint Distribution function and explain the properties of joint Distribution function?
  - b) Consider the bivariate r.v. (X, Y)

$$f_{XY}(x, y) = \begin{cases} k(x + y) & 0 < x < 2, 0 < y < 2 \\ 0 & \text{otherwise} \end{cases}$$

5

9

7

7

8

7

7

7

Find the conditional pdf's  $f_{Y|X}(y|x)$  and  $f_{X|Y}(x|y)$ .

### **UNIT-IV**

- 7. a) Explain the concept of stationarity and statistical independence with an example.
  - b) A random process is defined as  $X(t)=A.\sin(GOt+\theta)$  where A is a constant and ' $\theta$ ' is a random variable, uniformly distributed over( $-\pi$ , $\pi$ ). 7 Check X(t) for stationary.

(OR)

- 8. a) When does the time average converge to the ensemble average? Justify the answer.
  - b) Consider two random processes  $X(t)=A\cos \Omega t + B\sin \Omega t$  and  $Y(t)=B\cos \Omega t A\sin \Omega t$  where A and B are uncorrelated, zero mean random variables with same variance and ' $\Omega$ ' is a constant. Show that X(t) and Y(t) are jointly stationary?

**UNIT-V** 

- 9. a) Briefly explain the concept of cross power density spectrum.
  - b) "For stationary random process the power spectrum is equal to the Fourier transform of the autocorrelation function" Justify.

 $(\mathbf{OR})$ 

- 10. a) State and explain various properties power spectral density function.
  - b) Consider a linear system as shown in figure:

$$X(t) \longrightarrow \boxed{\frac{1}{6+j\omega}} \longrightarrow Y(t)$$

X(t) is the input and Y(t) is the output of the system. The autocorrelation of X(t) is  $R_{xx}(\tau)=5\delta(\tau)$  determine the PSD and autocorrelation.

# **CODE:** 16CS2008 **SET-1**

# ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

### II B.Tech II Semester Supplementary Examinations, September- 2021 DATABASE MANAGEMENT SYSTEMS

			DATABASE MANAGEMENT SYSTEMS	
	(Common to CSE & IT)			
Time:	3 1	Hou		s: 70
			All Overtions Corry Equal Marks	
			All Questions Carry Equal Marks All parts of the Question must be answered at one place	
			An parts of the Question must be answered at one place	
			<u>UNIT-I</u>	
1	•	a)	Explain any four significant advantages of using Data Base Management Systems	6M
			over storing conventional file system for maintaining data in an organization.	
		b)	Explain various data models in DBMS.	8M
•		`	(OR)	03.5
2		a)	Explain in detail about the key components of the DBMS system structure.	8M
		b)	Discuss the query processing in database system structure.	6M
			TINITE II	
3		a)	<u>UNIT-II</u> Construct an ER diagram for Car Insurance company Database. Identify entities,	8M
3	•	a)	Attributes for each entity, relationship among entities. Represent necessary	OIVI
			Constraints in this database design process in detail.	
		b)	Explain the types of integrity constraints in DBMS with a suitable example	6M
			$(\mathbf{OR})$	
4		a)	Construct an E-R diagram for a hospital with a set of patients and a set of medical	8M
			Doctors. Associate with each patient a log of the various tests and examinations	
			Conducted.	
		b)	What is an integrity constraint? Explain its enforcement by DBMS with illustrative	6M
			example.	
			TINIO III	
5	í. ,	a)	<u>UNIT-III</u> What is NULL? What is its importance? How are these values handled in relational	7M
3	•	a)	model?	/ IVI
		b)	What is a Trigger? And what are its three parts? Explain the differences between	7M
		0)	Triggers and Integrity constraints	, 1,1
			(OR)	
6	· ·	a)	Discuss GROUPBY and HAVING clauses with an example. And also give the	7M
			Constraints related to their usage.	
		b)	Explain any four SQL Aggregate operators with an example	7M
7	,	,	<u>UNIT-IV</u>	<i>(</i> ) <i>(</i>
/		a)	Explain two phase locking protocol	6M
		b)	Explain FOURTH and THIRD normal forms with examples (OR)	8M
Q	3.	a)	Discuss about the implementation of atomicity and durability.	6M
O		a) b)	Explain BCNF and the properties of decompositions	8M
		0)	Explain Bertz and the properties of decompositions	01/1
			<u>UNIT-V</u>	
9	١.	a)	How records are represented and organized in a file? Explain with suitable	7M
			example	
		b)	Demonstrate the implementation of B+ trees.	7M
4	Λ	- \	(OR)	71.4
1	0.	a)	Explain the following:  i) Primary index: ii) Secondary index:	7M
		h)	i) Primary index ii) Secondary index.	71/

7M

b) Explain ISAM in detail