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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year I Semester Supplementary Examinations November-2024

SURVEYING

(Civil Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Briefly explain the principles of surveying.	CO1	L2	6M
	b	Write short notes on types of errors.	CO1	L2	6M
		OR			
2	a	Explain in detail the classifications of surveying.	CO1	L2	6M
	b	Briefly explain the methods of obstacles in chaining.	CO1	L2	6M

UNIT-II

3	a	Write short notes on methods of leveling.	CO2	L2	6M
	b	Briefly explain the temporary adjustment of leveling.	CO2	L2	6M
		OR			
4	a	Discuss the effects of curvature and refraction in leveling.	CO2	L2	6M
	b	What are the indirect methods of locating a contour? Write about any two method.	CO2	L2	6M

UNIT-III

5	a	Write the temporary adjustments of a theodolite.	CO3	L2	6M
	b	How do you measure horizontal angle between two points with the help of a theodolite by repetition method?	CO3	L3	6M
		OR			
6	a	Give a list of the permanent adjustments of a transit theodolite.	CO3	L2	6M
	b	What are the different errors in theodolite work? How are they eliminated?	CO3	L2	6M

UNIT-IV

7	a	Write short notes on types of circular curves.	CO4	L2	6M
	b	Define degree of curve. Derive a relation between the radius and degree of a curve.	CO4	L3	6M
		OR			
8	a	Describe with sketch the method of setting a simple circular curve by Rankine's deflection angle method.	CO4	L3	6M
	b	Write short notes on reverse curves.	CO4	L2	6M

UNIT-V

9	a	List out and explain the properties of EM waves.	CO5	L2	6M
	b	State and brief about transit time.	CO5	L2	6M
		OR			
10	a	Explain in detail about the infrared type of EDM instrument.	CO5	L2	6M
	b	Write short notes on total stations.	CO5	L2	6M

***** END *****

O.P.Code: 16EE209 | R16 | H.T.No. | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Supplementary Examinations November-2024

ELECTRICAL & MECHANICAL TECHNOLOGY

(Civil Engineering)

Time: 3 Hours **Max. Marks: 60**

*(Answer all Six Units, 6*10 = 60 Marks)*

PART-A

UNIT-I

1	Explain the various type errors occurred in a measuring instrument.	CO1	L2	10M
	OR			
2	Explain the construction and working principle of attraction type Moving Iron instruments.	CO1	L2	10M

UNIT-II

3	Explain in detail about various types of fuses used in electrical wiring system.	CO2	L2	10M
	OR			
4	Explain the CTS and concealed type of electrical wiring systems with necessary diagrams.	CO2	L2	10M

UNIT-III

5	Explain the various points to be considered for testing and inspection of electrical domestic wiring system.	CO3	L2	10M
	OR			
6	Explain the important general points to be considered for power load wiring installations.	CO3	L2	10M

PART-B

UNIT-IV

7	What are the various classifications of air compressors? Explain centrifugal and axial flow compressor with neat sketch.	CO4	L2	10M
	OR			
8	Explain Central Packaged Air Conditioner with neat sketch.	CO4	L2	10M

UNIT-V

9	Explain the rope drive, chain drive and gear drive with neat sketch.	CO5	L2	10M
	OR			
10	Explain Conveyers and Excavators with neat sketch.	CO5	L2	10M

UNIT-VI

11	Explain working of Submerged arc Welding process with neat sketch.	CO6	L2	10M
	OR			
12	Differentiate between Soldering , Brazing and Welding.	CO6	L2	10M

***** END *****

O.P.Code: 16ME312	R16	H.T.No.

R16

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations November-2024
THERMAL ENGINEERING
(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Explain any six classifications of Internal Combustion engines.	CO1	L1	6M
	b	With a neat sketch explain any three parts in Internal Combustion engine.	CO1	L2	6M
		OR			
2		A four stroke four cylinder diesel engine running at 300 rpm produces 25 kW of brake power. The cylinder dimensions are 30 cm bore and 25 cm stroke. Fuel consumption rate is 1 kg/min while air fuel ratio is 10. The average indicated mean effective pressure is 0.8 MPa. Determine indicated power, mechanical efficiency, and brake thermal efficiency of engine. The calorific value of fuel is 43 MJ/kg. The ambient conditions are 1.013 bar, 27°C.	CO1	L3	12M

UNIT-II

3	a	With the help of neat sketch, explain the working of vane type compressor.	CO2	L2	6M
	b	A single stage reciprocating air compressor is required to compress 80 m3 of air from 1 bar abs to 10 bar abs. Find the work to be supplied if the law of expansion is $PV^{1.25}$=Constant.	CO2	L3	6M
		OR			
4		Derive the relation for Volumetric efficiency of a single stage reciprocating compressor.	CO2	L3	12M

UNIT-III

5	a	Describe the different operations of Rankine cycle and also derive the expression for its efficiency.	CO3	L4	6M
	b	A steam power plant works between 40 bar and 0.05 bar. If the steam supplied is dry saturated and the cycle of operation is Rankine, Find: (i) Cycle efficiency (ii) Specific steam consumption.	CO3	L3	6M
		OR			
6	a	Explain with the help of neat diagram about Regenerative Cycle.	CO3	L2	6M
	b	In a regenerative cycle inlet conditions are 40 bar and 400^0C. Steam is bled at 10 bar in regenerative heating. The exit pressure is 0.8 bar. Neglecting the pump work. Determine the efficiency of the cycle.	CO3	L3	6M

UNIT-IV

7		Define Steam nozzle and also explain about expansion of steam in nozzle with neat sketch.	CO4	L2	12M
		OR			
8		Explain about Surface condenser and discuss its types with neat sketches.	CO4	L4	12M

UNIT-V

9	a	Draw and explain the velocity triangle of impulse turbine.	CO5	L5	6M
	b	Derive an expression for work done in impulse turbine.	CO5	L4	6M
		OR			
10		Explain about the various methods of Governing steam turbines with neat sketches.	CO5	L4	12M

***** END *****

O.P.Code: 16IT614	R16	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. IV Year I Semester Supplementary Examinations November-2024

INTERNETWORKING WITH TCP/IP

(Computer Science & Information Technology)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Illustrate the significance of sub-network mask.	CO1	L1	6M
	b	Discuss the four levels of addresses used in an internet employing the TCP/IP protocols.	CO1	L2	6M
		OR			
2	a	Explain about the purpose of each layer in the OSI Model.	CO1	L3	8M
	b	Write short notes on NAT.	CO1	L3	4M
		UNIT-II			
3	a	How to identify Physical address from Logical Address? Illustrate details.	CO2	L2	8M
	b	Write short notes on ARP Package.	CO2	L4	4M
		OR			
4	a	Explain in detail about ICMPv4 messages.	CO2	L4	8M
	b	Illustrate Packet Format of ICMP.	CO2	L2	4M
		UNIT-III			
5		What is Distance Vector Routing? Explain the suedo code with an example.	CO3	L1	12M
		OR			
6	a	Explain with an example the concept of Link State Routing.	CO3	L3	10M
	b	State the Optimality Principle.	CO3	L1	2M
		UNIT-IV			
7	a	Give the format of TCP segment header and explain the significance of each field.	CO4	L2	6M
	b	Discuss TCP features in detail.	CO4	L2	6M
		OR			
8	a	With an example explain how to calculate checksum of a UDP use datagram.	CO4	L3	5M
	b	Explain connection establishment in TCP using three-way handshaking.	CO4	L3	7M
		UNIT-V			
9	a	What is IPv6? Explain Packet format.	CO5	L2	8M
	b	Explain the transition from IPv4 to IPv6.	CO5	L3	4M
		OR			
10	a	Explain Silly window syndrome. Give the two solutions to prevent it.	CO5	L3	6M
	b	Discuss TCP Congestion control mechanisms.	CO5	L2	6M

***** END *****

O.P.Code: 16IT611	R16	H.T.No.										

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Supplementary Examinations November-2024

INFORMATION SECURITY

(Computer Science & Information Technology)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Discuss in detail about various types of Security attacks with neat diagrams.	CO1	L6	6M
	b	What is symmetric key cryptography? Discuss its advantages and limitations.	CO1	L6	6M
		OR			
2	a	Describe in detail about Conventional Encryption Model.	CO1	L4	6M
	b	Determine the security mechanisms required to provide various types of security services.	CO1	L5	6M

UNIT-II

3		Explain RSA algorithm with suitable examples.	CO2	L2	12M
		OR			
4		Design Diffie - Hellman Key exchange algorithm. Evaluate using Diffie - Hellman key exchange technique. Let p=353 be the prime number and α=3 be it's primitive root. Let A and B secret keys Xa =97 and Xb =233. Compute the following : (i)Public key of A and B (ii)Common secret key.	CO2	L5	12M

UNIT-III

5		List out applications of cryptographic hash functions.	C31	L1	12M
		OR			
6		Describe hash function based on cipher block chaining.	CO4	L6	12M

UNIT-IV

7		What is secret key distribution? Explain secret key distribution with confidentiality and authentication.	CO1	L1	12M
		OR			
8		Discuss various PGP cryptographic functions and services in detail.	CO4	L3	12M

UNIT-V

9		What is the use of SSL protocol? Explain SSL record protocol operation with SSL record format.	CO1	L1	12M
		OR			
10		Compare the features of host based IDS and network based IDS. Why, when and where to use host based IDS?	CO2	L2	12M

***** END *****

O.P.Code: 16ME329	R16	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations November-2024
METAL FORMING PROCESSES
(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Define engineering stress and true stress.	CO1	L1	6M
	b	Compare engineering strain and true strain.	CO1	L2	6M
		OR			
2		Develop an expression for three dimensional stress analysis.	CO1	L6	12M
		UNIT-II			
3		Define forging. Explain smith forging and roll forging processes with the necessary sketches.	CO2	L2	12M
		OR			
4		Classify the types of rolling mills with the necessary sketches.	CO2	L2	12M
		UNIT-III			
5	a	Summarize the characteristics of extrusion process.	CO3	L2	6M
	b	Compare forward and backward extrusion.	CO3	L5	6M
		OR			
6		Outline the working principle of forward and backward extrusion process with the proper sketches.	CO3	L5	12M
		UNIT-IV			
7		Define drawing and explain cup and tube drawing process with proper sketches.	CO4	L2	12M
		OR			
8		Explain the following sheet metal working shearing operations performed in a workshop with neat sketch. a) Blanking b) Piercing c) Nibbling d) Notching	CO4	L3	12M
		IT-V			
9		Explain the injection moulding process in detail with suitable sketch. Mention its applications and limitations.	CO5	L3	12M
		OR			
10		Classify the various rapid prototyping methods. Explain the working principle involved in selective laser sintering process.	CO5	L2	12M

***** END *****

Q.P. Code: 16EC402

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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2024

SWITCHING THEORY & LOGIC DESIGN

(Electrical & Electronics Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	State Duality theorem. List Boolean laws and their Duals.	L1	6M
	b	Obtain the Dual of the following Boolean expressions. i) AB+A(B+C)+B'(B+D) ii) A+B+A'B'C iii) A'B+A'BC'+A'BCD+A'BC'D'E iv) ABEF+ABE'F'+A'B'EF	L3	6M

OR

2	a	Reduce the following Boolean expressions using Boolean algebra i) (X'Y'+Z)'+Z+XY+WZ ii) A'B (D'+C'D)+ B (A+A'CD) iii) (A'+C) (A'+C') (A+B+C'D)	L3	6M
	b	Convert the given decimal number 351 to binary, octal, hexadecimal and BCD equivalent.	L1	6M

UNIT-II

3		Minimize the given Boolean function F(A,B,C,D) = Σm (0,1,2,3,6,7,13,15) using tabulation method and implement using basic gates.	L2	10M

OR

4	a	Simplify the following expression using the K-map for the 3-variable. Y = AB'C+A'BC+A'B'C+A'B'C'+AB'C'	L3	6M
	b	Simplify the Boolean function F(A,B,C,D)=∑ (1,3,7,11,15) +d (0,2,5)	L3	6M

UNIT-III

5	a	Implement 3-bit Magnitude Comparator with neat diagram.	L3	6M
	b	Implement the following Boolean function using 8:1 multiplexer. F(A,B,C,D) = A'BD'+ACD+B'CD+A'C'D.	L3	6M

OR

6	a	Implement 2-bit by 2-bit multiplier with half adders.	L3	6M
	b	Design & implement Full Adder and full subtractor using Decoder.	L3	6M

UNIT-IV

7	a	Convert S-R flip flop into JK-flip flop. Draw and explain the logic diagram.	L1	6M
	b	With a neat sketch explain MOD 6 Johnson counter using D Flip-Flop.	L3	6M

OR

8	a	A clocked sequential circuit with single input x and single output z produces an output z=1 whenever the input x compares the sequence 1011 and overlapping is allowed. Obtain the state diagram, state table and design the circuit with D flip-flops.	L2	6M
	b	Implement 6-bit ring counter using suitable shift register. Briefly describe its operation.	L3	6M

UNIT-V

9		Implement the following Boolean function using PAL. (i)A(w, x, y, z) = Σm (0,2,6,7,8,9,12,13) (ii)B(w,x,y,z)) = Σm(0,2,6,7,8,9,12,13,14)	L3	12M
		OR		
10	a	Implement the following Boolean function using PLA (i)F(w, x, y, z) = Σm(0,1,3,5,9,13) (ii)F(w,x,y,z)) = Σm(0,2,4,5,7,9,11,15)	L3	8M
	b	Differentiate among PROM, EPROM, and EEPROM.	L3	4M

*** END ***

O.P.Code: 16ME314	R16	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2024

DESIGN OF MACHINE ELEMENTS-I

(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	What are the general design consideration should be followed while designing a machine element.	CO1	L1	6M
	b	What is meant by factor of safety? Explain how it can be used in design applications.	CO1	L1	6M
		OR			
2		A mild steel shaft of 50 mm diameter is subjected to a bending moment of 2000 N-m and a torque T. If the yield point of the steel in tension is 200 MPa, find the maximum value of this torque without causing yielding of the shaft according to 1. the maximum principal stress; 2. The maximum shear stress; and 3. the maximum distortion strain energy theory of yielding.	CO1	L2	12M

UNIT-II

3		Explain Goodman's and Soderberg's and Gerber's parabola equation for combination stresses.	CO2	L3	12M
		OR			
4	a	Discuss the factors affecting endurance limit.	CO2	L1	6M
	b	Explain the following terms (i)Theoretical stress concentration factor, (ii) fatigue stress concentration factor, (iii) Notch sensitivity.	CO2	L1	6M

UNIT-III

5	a	What is the difference between caulking and fullering? Explain with the help of neat sketches.	CO3	L2	6M
	b	A double riveted lap joint is made between 15 mm thick plates. The rivet diameterand pitch are 25 mm and 75 mm respectively. If the ultimate stresses are 400 MPa in tension, 320 MPa in shear and 640 MPa in crushing, find the minimum force per pitch which will rupture the joint. If the above joint is subjected to a load such that the factor of safety is 4, Find out the actual stresses developed in the plates and the rivets.	CO3	L3	6M
		OR			
6	a	Write advantages and disadvantages of welded joint over riveted joints.	CO3	L1	6M
	b	Discuss the standard location of elements of a welding symbol.	CO3	L1	6M

UNIT-IV

7	a	What are the applications of a cotter joint?	CO4	L1	6M
	b	How the shaft is designed when it is subjected to twisting moment only.	CO4	L1	6M
		OR			

8		A shaft is supported by two bearings placed 1 m apart. A 600 mm diameter pulley is mounted at a distance of 300 mm to the right of left hand bearing and this drives a pulley directly below it with the help of belt having maximum tension of 2.25 kN. Another pulley 400 mm diameter is placed 200 mm to the left of right hand bearing and is driven with the help of electric motor and belt, which is placed horizontally to the right. The angle of contact for both the pulleys is180° and $\mu = 0.24$. Determine the suitable diameter for a solid shaft, allowing working stress of63 MPa in tension and 42 MPa in shear for the material of shaft. Assume that the torque on one pulley is equal to that on the other pulley.	**CO4**	**L4**	**12M**

UNIT-V

9	**a**	What is a key? State its function with neat sketch.	**CO5**	**L1**	**6M**
	b	A 45 mm diameter shaft is made of steel with yield strength of 400 MPa. A parallel key of size 14 mm wide and 9 mm thick made of steel with yield strength of 340 MPa is to be used. Find the required length of key, if the shaft is loaded to transmit the maximum permissible torque. Use maximum shear stress theory and assume a factor of safety of 2.	**CO5**	**L4**	**6M**

OR

10		Design and draw a protective type of cast iron flange coupling for a steel shaft transmitting 15 kW at 200 r.p.m. and having an allowable shear stress of 40 MPa. The working stress in the bolts should not exceed 30 MPa. Assume that the same material is used for shaft and key and that the crushing stress is twice the value of its shear stress. The maximum torque is 25% greater than the full load torque. The shear stress for cast iron is 14 MPa.	**CO5**	**L6**	**12M**

***** END *****

O.P.Code: 16HS612	R16	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Supplementary Examinations November-2024

ENGINEERING MATHEMATICS-III

(Common to All)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Show that $w = \log z$ is analytic everywhere except at the origin and find $\frac{dw}{dz}$	CO1	L1	6M
	b	Evaluate $\int_0^{1+3i} (x^2 - iy)\,dz$ along the path $y = x$.	CO1	L5	6M

OR

2	a	Find the analytic function $f(z)$ whose real part is $e^x(x\sin y + y\cos y)$	CO1	L1	6M
	b	Evaluate the integral $\oint_c \frac{\cos z}{z(z^2+8)}dz$, where c denotes the boundary of the square whose sides lie along the lines $x = \pm 2$, $y = \pm 2$.	CO1	L5	6M

UNIT-II

3	a	Determine the poles of the function $f(z) = \frac{z^2}{(z-1)^2(z+2)}$ and the residues at each pole.	CO1	L2	6M
	b	Find the bilinear transformation which maps the points $(\infty, i, 0)$ into the points $(-1, -1, 1)$ in the w – plane.	CO1	L1	6M

OR

4	a	Obtain the residues of $f(z) = \frac{z^2}{1-z^4}$ these singular points which lie inside the circle $\lvert z\rvert = 1.5$.	CO1	L2	6M
	b	Find the bilinear transformation that maps the points $(1, i, -1)$ into the points $(2, i, -2)$ in the w – plane.	CO1	L1	6M

UNIT-III

5		Find a positive root of $x^3 - x - 1 = 0$ correct to three decimal places by using Bisection method.	CO2	L3	12M

OR

6	a	Construct Newton's forward interpolation difference table for the following table values, and also find the value of $f(x)$ when $x = 1.4$ by using Newton's forward interpolation formula.	CO2	L6	6M

x	1.1	1.3	1.5	1.7	1.9
$f(x)$	0.21	0.69	1.25	1.89	2.61

	b	Determine $f(10)$, by using the Lagrange interpolation formula for the following function values $f(x) = 168, 192, 336$ at $x = 1, 7, 15$ respectively.	CO2	L2	6M

UNIT-IV

7 **a** Determine the second-degree polynomial to the following data by the method of least squares **CO3 L3 6M**

x	0	1	2	3	4
y	1	5	10	22	38

b Determine the exponential function $y = ae^{bx}$ to the following data values **CO3 L3 6M**

x	0	1	2	3	4
y	1	1.8	3.3	4.5	6.3

OR

8 **a** Compute $\int_0^4 e^x\,dx$ by Simpson's $\frac{1}{3}$ rule with 10 subdivisions. **CO3 L3 6M**

b Compute $\int_0^6 \frac{1}{1+x^2}\,dx$ by using Simpson's $\frac{3}{8}$ rule. **CO3 L3 6M**

UNIT-V

9 **a** Evaluate $y(0.1)$, $y(0.2)$ and $y(0.3)$ using Taylor's series method given that $y' = y^2 + x$, $y(0) = 1$. **CO4 L5 6M**

b Find the value of y for $x = 0.4$ by Picard's method given that $\frac{dy}{dx} = x^2 + y^2$, $y(0) = 0$. **CO4 L1 6M**

OR

10 Using R-K method of 4th order, find $y(0.1)$, $y(0.2)$ and $y(0.3)$ given that $\frac{dy}{dx} = 1 + xy$, $y(0) = 2$ **CO4 L2 12M**

***** END *****

O.P.Code: 16CS517 | R16 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2024

FORMAL LANGUAGES AND AUTOMATA THEORY

(Common to CSE & CSIT)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Define relations on set and explain its property with an example.	CO1	L1	6M
	b	Convert the following Mealy machine into its equivalent Moore machine.	CO1	L2	6M

Present State	I/P=0		I/P=1	
	Next State	O/P	Next State	O/P
→ A	C	0	B	0
B	A	1	D	0
C	B	1	A	1
D	D	1	C	0

OR

2	a	Define NFA and DFA. Construct DFA for the given NFA.	CO1	L2	8M

	Next state	
	0	1
→ q0	q0,q1	q0
q1	q2	q1
q2	q3	q3
(q3)	-	q2

	b	Define NFA. What are the differences between DFA & NFA?	CO1	L2	4M

UNIT-II

3	a	Consider the below finite automata and check the strings are accepted or not.	CO2	L3	8M

States (Q)	Input Alphabtes	
	0	1
→q0	q1	q3
q1	q0	q2
(q2)	q3	q1
q3	q2	q0

(i) 1110 (ii) 0001 (iii) 1010 (iv) 0101

	b	List out the identities of Regular expression.	CO2	L1	4M

		OR			
4	**a**	State Arden's theorem and construct the regular expression for the following FA using Arden's theorem.	**CO2**	**L1**	**5M**
	b	Prove that the language L= $\{a^n b^n \mid n>=1\}$ is not regular using pumping lemma with procedure.	**CO2**	**L2**	**7M**
		UNIT-III			
5	**a**	Convert the following grammar into Greibach normal form. S→ AA / a A→ SS / b	**CO3**	**L4**	**10M**
	b	Define Ambiguous grammar.	**CO3**	**L2**	**2M**
		OR			
6	**a**	Explain about derivation and parse trees? Construct the string 0100110 from the Leftmost and Rightmost derivation. S→ 0S / 1AA A→ 0 / 1A / 0B B→ 1 / 0BB	**CO3**	**L2**	**7M**
	b	What is the differentiate between CFG and Regular Language?	**CO3**	**L3**	**5M**
		UNIT-IV			
7	**a**	Construct an equivalent PDA for the following CFG. S→ aAB | bBA A→ bS | a B→ aS | b	**CO4**	**L3**	**7M**
	b	Explain about the graphical notation of PDA.	**CO4**	**L2**	**5M**
		OR			
8		Explain Deterministic Push down Automata with example.	**CO4**	**L3**	**12M**
		UNIT-V			
9		Explain Universal turing machine. Give example.	**CO5**	**L3**	**12M**
		OR			
10	**a**	Construct a Turing machine which multiplies two unary numbers.	**CO5**	**L4**	**10M**
	b	Describe linear bounded automaton.	**CO5**	**L2**	**2M**

***** END *****