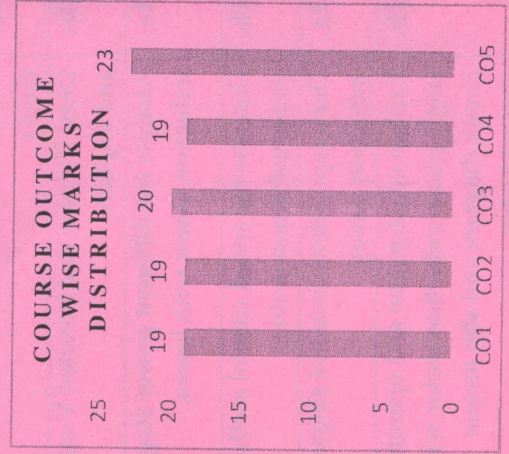
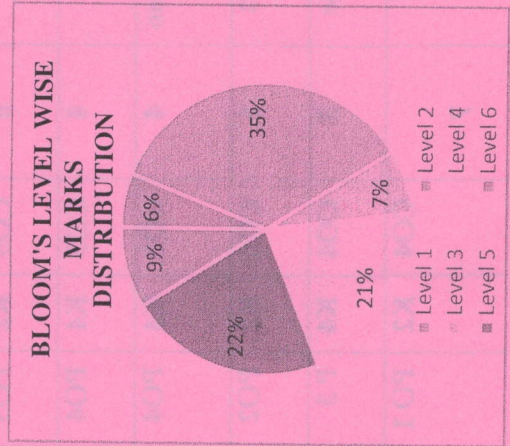



CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

CO1	Identify different types of armature windings, field winding and winding factors for calculating induced EMF.
CO2	Articulate spatially displaced armature windings for the generation of various magnetic fields in AC machines
CO3	Evaluate the fundamental control practices like starting, breaking, reversing and speed control strategies for different applications. Also Describe different tests for calculating the performance parameters of three phase induction motors.
CO4	Outline the performance of a single phase induction motor for studying the torque-speed characteristics.
CO5	Describe the different methods for the computation of voltage regulation of an alternator. Also analyse the performance and power angle characteristics of alternator.

Course Outcomes



 ARKAJAIN University Jharkhand		END TERM EXAMINATION	
Branch	Electrical and Electronics Engineering	Program	B.Tech
Course Name	Electrical Machine II	Semester	IV
Course Code	BTE24072	Year	2022/Even
Time: 3 Hour Maximum Marks : 70	Start writing from 2nd page onwards; <u>don't Write On The 1st Page Backside</u> <ul style="list-style-type: none"> Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will comes under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u> 		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1a to Q1j) – 20 Marks

Q. No.1	QUESTIONS	Marks	COs	KL	PO
1a.	Describe pole pitch.	2	CO1	K2	PO2
1b.	How can we change the direction of rotating magnetic field?	2	CO2	K6	PO1
1c.	Define alternating magnetic field.	2	CO2	K1	PO1
1d.	Justify the locking tendency of the rotor of a 3 phase induction motor.	2	CO3	K5	PO4
1e.	Classify the types of rotor in a 3 phase induction motors?	2	CO3	K4	PO4

Q. No.	QUESTIONS	Marks	COs	KL	PO
1f.	List the applications of split phase motor.	2	CO4	K1	PO1
1g.	Select the test by which synchronous impedance can be determine.	2	CO5	K4	PO5
1h.	Describe coil pitch.	2	CO1	K2	PO2
1i.	Show the formula for distribution factor.	2	CO5	K3	PO3
1j.	Justify that single phase induction motor not self-starting?	2	CO4	K5	PO4

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question 5 Marks)

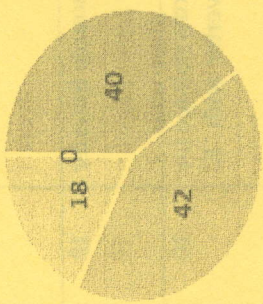
Q. No.	QUESTION	Marks	COs	KL	PO
2a.	Describe full pitch and short pitch winding	4	CO1	K5	PO5
2b.	Define slot angle.	1	CO1	K1	PO1
3a.	Analyse the type of magnetic field produced by single winding with ac source.	1	CO2	K4	PO4
3b.	Justify Single Phase AC source applied to single phase winding produces pulsating magnetic field.	4	CO2	K5	PO4
4	Build the slip torque characteristics of 3 phase induction motor and explain in brief.	5	CO3	K6	PO5
5	Analyse the armature reaction of an alternator. Illustrate the effect of armature reaction at different power factors?	5	CO5	K4	PO4
6	Describe about shaded pole induction motor.	5	CO4	K2	PO3
7a.	List the types of electrical breaking.	1	CO3	K1	PO1

7b.	Evaluate pitch factor and distribution factor of a 3-phase, 4-pole, and 24-slot alternator and are short pitched by one slot.	4	CO5	K5	PO2
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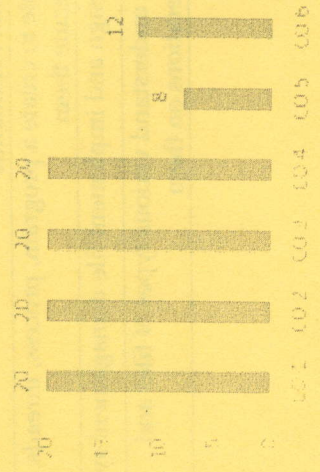
Section C (Answer any THREE out of FIVE) – 30 Marks-(Each question Carry 10 Marks)


Q. No.	QUESTIONS	Marks	COs	KL	PO
8a.	Explain the advantage of short pitch coils over full pitch coils.	4	CO1	K2	PO2
8b.	Summarize the advantages of fractional slot winding.	3	CO1	K2	PO4
8c.	Show the formula of phase spread and explain.	3	CO1	K3	PO2
9a.	Derive the formula of speed of rotating magnetic field.	4	Co2	K6	PO2
9b.	Justify that a rotating magnetic field of constant amplitude is produced when 3-phase balanced winding is excited by three phase balanced source.	6	CO2	K5	PO4
10a.	Explain in detail about Two reaction theory.	6	CO5	K2	PO3
10b.	Draw V-curve and inverted V-curve and Explain.	4	CO5	K4	PO4
11a.	Analyse the different power stages of an induction motor with losses.	4	CO3	K4	PO4
11b.	Describe the speed control method of 3 phase induction motor.	6	CO3	K2	PO2
12a.	Draw equivalent circuit of single phase induction motor.	3	CO4	K4	P3
12b.	Explain construction and operation of single phase induction motor with circuit diagram and slip torque characteristics.	7	CO4	K2	PO1

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



 ARKAJAIN University Jharkhand		END TERM EXAMINATION	
Branch	Electrical and Electronics Engineering.	Program	B.TECH
Subject Name	POWER ELECTRONICS	Semester	IV
Course Code	BTE25111	Year	2022/Even
Time: 3 Hour Maximum Marks : 70	Start writing from 2nd page onwards; don't Write On The 1st Page Backside <ul style="list-style-type: none"> Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u> 		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1a to Q1j) – 20 Marks

Q. No.1	Questions	Marks	COs	KL	PO
1a.	What are different types of basic inverter modes being available?	2	CO1	K4	PO1
1b.	Draw Type B chopper circuit.	2	CO1	K2	PO1
1c.	What is the use of chopper?	2	CO1	K2	PO1
1d.	Write formula of ripple factor.	2	CO1	K3	PO1
1e.	Where do we use PWM?	2	CO1	K2	PO1
1f.	What is the condition of forward blocking mode in terms of junction?	2	CO1	K4	PO1
1g.	Where do we use SUS?	2	CO1	K4	PO1
1h.	Where do we use inverter circuit?	2	CO1	K3	PO1

1i.	In SCR, number of p-type and junctions are ___ and ___, respectively.	2	CO1	K2	PO1
1j.	In bridge converter, what is the value peak inverse voltage across SCR?	2	CO1	K2	PO1

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 5 Marks)

Q NO	Questions	Marks	COs	KL	PO
2.	What is the use of freewheeling diode in the converter.	5	CO2	K4	PO2
3.	Explain single-phase bridge converter with proper circuit diagram.	5	CO2	K5	PO2
4.	Derive mathematical expression of Type B chopper.	5	CO3	K3	PO3
5.	For type-A chopper, DC source voltage = 200 V, load resistance = 8 ohm. Take a voltage drop of 1 V across chopper when it is on. For a duty cycle of 0.8. Calculate (i) Average and rms value of output voltage (ii) chopper efficiency.	5	CO4	K5	PO3
6.	A single phase 220V, 1 kW heater is connected across 1 phase 220V, 50Hz supply through an SCR. For firing angle delay of 45° and 90°, calculate the power absorbed in the heater element.	5	CO5	K4	PO4
7.	Explain single-phase step-down cycloconverter with proper circuit diagram.	5	CO6	K3	PO5

Section C (Answer any THREE out of FIVE) – 30 Marks-(Each question Carry 10 Marks)

Q NO	Questions	Marks	COs	KL	PO
8.	Explain RC Triggering and V-I Characteristics of a SCR.	10	CO2	K4	PO2

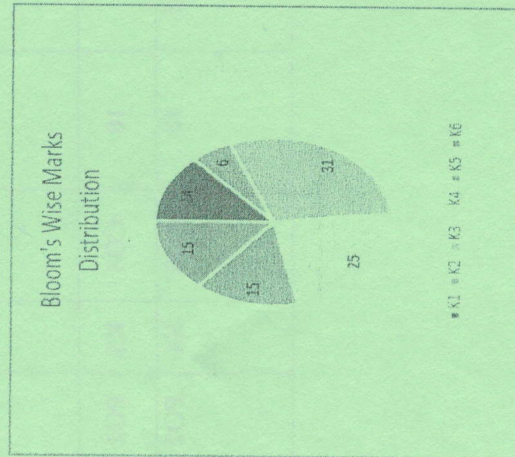
9.	Derive the mathematical expression of single-phase full converter with source impedance.	10	CO3	K4	PO3
10.	Explain 120° mode voltage source inverter with proper circuit diagram.	10	CO4	K3	PO4
11.	Derive average voltage and rms voltage for single-phase half-wave converter with 'R' load.	10	CO5	K2	PO5
12.	Explain 180° mode voltage source inverter with proper circuit diagram.	10	CO6	K2	PO6

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Able to demonstrate basic knowledge about Operating System
	CO2	Develop an understanding of various DOS, Linux commands
	CO3	Able to create a program, process, threads, and execute them
	CO4	Design and implement file management system
	CO5	To understand various types of files and operations on them

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Study the basic concepts of Signals.
	CO2	Classify the continuous time and discrete time systems.
	CO3	Analyse the systems in complex frequency domain.
	CO4	Evaluate the discrete time signals and system using different transform domain techniques.
	CO5	Design the reconstruction of signals.



END TERM EXAMINATION

Branch	Electrical and Electronics Engineering	Program	B.Tech
Course Name	Signals and Systems	Semester	IV
Course Code	BTE25112	Year	2022/Even

Time: 3 Hour
Maximum Marks : 70

- Start writing from 2nd page onwards; don't Write On The 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Four out of Six of Section B
- Answer Any Three out of Five of Section C
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.

Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1a to Q1j) – 20 Marks

Q. No.1	QUESTION	Marks	COs	KL	PO
1a.	Recall the variable on which Time scaling operation performed.	2	CO1	K1	PO1
1b.	Which value should be the square sum of the impulse for an LTI discrete system to be stable,	2	CO2	K1	PO2
1c.	Show the system is causal or not? If the impulse response of discrete-time signal is given by $h[n] = u[n+3]$.	2	CO3	K2	PO3
1d.	Explain the function of an even signal?	2	CO1	K2	PO2
1e.	Recall the causal continuous system with impulse response should satisfy	2	CO2	K1	PO2

Section C (Answer any THREE out of FIVE) – 30 Marks-(Each question Carry 10 Marks)

Q.NO.	QUESTION	Marks	COs	KL	PO
8.	Classify the signals with examples	10	CO2	K3	PO1
9.	List the Procedure to find the convolution of two signals.	10	CO1	K3	PO1
10.	Solve the following signals to find the even and odd components: (a) $x(n) = \{-3, 1, 2, -4, 2\}$ (b) $x(n) = \{-2, 5, 1, -3\}$	10	CO4	K6	PO2
11.	Prove any two properties of the Fourier series.	10	CO3	K5	PO2
12.	Simplify the following properties of z-transform. Time shifting ii) Time reversal.	10	CO3	K4	PO2

Q.NO.	QUESTION	Marks	COs	KL	PO
1f.	Find discrete-time signals weighted superposition of time-shifted impulse responses is termed as.	2	CO3	K1	PO2
1g.	Why does the signal change while time scaling?	2	CO1	K1	PO1
1h.	Explain the periodic signals?	2	CO1	K2	PO1
1i.	Recall the signal which is an energy signal if the they have average energy.	2	CO2	K1	PO2
1j.	What is the period of the signal when it is time shifted?	2	CO2	K1	PO1

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question 5 Marks)

Q.NO.	QUESTION	Marks	COs	KL	PO
2.	Discuss the two properties of unit impulse function.	5	CO3	K6	PO1
3.	Determine the relationship between Unit step, ramp and impulse signals.	5	CO4	K5	PO3
4.	Compare Causal and Anti Causal System. OR Simplify the equation to check, Whether the given system is causal and stable. $y(n) = 3x(n-2) + 3x(n+2)$	5	CO3	K4	PO2
5.	Explain the z-transform and inverse z-transform.	5	CO4	K4	PO2
6.	Simplify the Shift Theorem (or Shifting Property) of Laplace Transform.	5	CO4	K3	PO2
7.	List the types of representation of discrete time signals?	5	CO2	K4	PO1



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END TERM
EXAMINATION

Branch	Electronics and Electrical Engineering	Program	B.TECH
Course Name	Essence of indian knowledge and tradition	Semester	IV
Course Code	BTE25299	Year	2022/Even
Time: 3 Hour Maximum Marks : 70	<ul style="list-style-type: none">Start writing from 2nd page onwards; <u>don't Write On The 1st Page Backside</u>Answer all Questions of Section A (Compulsory)Answer Any Four out of Six of Section BAnswer Any Three out of Five of Section CPossession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will comes under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u>		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1a to Q1j) – 20 Marks

Q. No.1	Questions	Marks	COs	KL	PO
1a.	Analyse Siddhanta in Indian cultural and traditional system	2	3	4	2
1b.	Discuss Vidya in Indian cultural and traditional system	2	1	2	10
1c.	Describe Etymology and draw the table of the seven major vedic system	2	4	5	2
1d.	What are the six Vedangas Constituted?	2	3	1	12
1e.	What is Veda? What are the different Principles of veda?	2	1	1	2
1f.	Briefly explain Chhands?	2	3	4	4
1g.	What is Kalpa?	2	3	1	1
1h.	Explain Vyakarana	2	5	4	2

1i.	What is the importance of Yoga?	2	5	5	1
1j.	What are the rules of Yoga?	2	3	1	1

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 5 Marks)

Q NO	Questions	Marks	COs	KL	PO
2.	Why Traditional knowledge is important?	5	6	4	2
3.	What are the four Vedas? Explain	5	5	5	1
4.	What is Astadasa Vaidya?	5	3	1	1
5.	What do you mean by Shiksha?	5	1	1	2
6.	What do you mean by Nirukta?	5	1	1	2
7.	How many ancient knowledge systems are there?	5	5	2	5

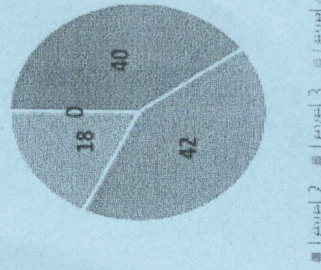
Section C (Answer any THREE out of FIVE) – 30 Marks-(Each question Carry 10 Marks)

Q NO	Questions	Marks	COs	KL	PO
8.	Briefly explain Siddhartha.	10	5	4	2
9.	What is importance of Yoga in Students life?	10	6	6	3
10.	Briefly explain Vyakarna	10	4	4	2
11.	What is Jyoth Sastra? Explain different classification of Jyothh Shastra.	10	2	4	2
12.	What is the importance of Yoga in student's life?	10	2	3	12

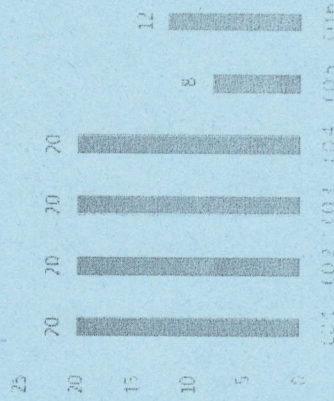
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	CO2	CO3	CO4	CO5	CO6
	Assess different principles of thought process, reasoning and inference of knowledge	Analyze the structure for different methods of Indian cultural system, emphasis on practical skills and social relevance.	Estimate the moment to make understand the importance of roots of Knowledge system.	Design to reinforced the traditional knowledge and apply to become epicenter of creative solution	Detail the bar behind the preparation and ability to engage in independent lifelong learning.	To understand and develop moral values among the students

Bloom's Level wise Marks Distribution



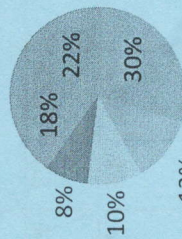
Course Outcome wise Marks Distribution



CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

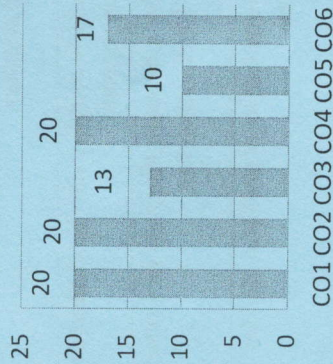
CO1	Identify the fundamental concepts and techniques used in digital electronics.
CO2	Understand the process of Analog to Digital conversion and Digital to Analog conversion.
CO3	Apply the defined technique to structure various number systems.
CO4	Examine the structure of various number systems and its application in digital design
CO5	Interpret the use of PLDs to implement the given logical problem.
CO6	Design and implement Combinational and Sequential logic circuits.

Bloom's Level Wise Marks Distribution




Level 1 Level 2 Level 3
Level 4 Level 5 Level 6

Course Outcome Wise Marks Distribution



CO1 CO2 CO3 CO4 CO5 CO6

 ARKAJAIN University Jharkhand		END TERM EXAMINATION	
Branch	Electrical and Electronics Engineering	Program	B.TECH
Course Name	Digital Electronics	Semester	IV
Course Code	BTE23029	Year	2022/Even
Time: 3 Hour Maximum Marks : 70	Start writing from 2nd page onwards; don't Write On The 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u>		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1a to Q1j) – 20 Marks

Q. No.1	Questions	Marks	COs	KL	PO
1a.	Define octal number system.	2	CO3	K1	PO1
1b.	Write difference between X-OR gate and X-NOR gates?	2	CO3	K2	PO2
1c.	Give importance of in pairs quads and octets K -maps?	2	CO4	K2	PO1
1d.	Why we use Decoder?	2	CO1	K3	PO2
1e.	Write difference between asynchronous and synchronous flip-flops?	2	CO4	K4	PO4
1f.	Draw D flip-flop with NAND latch.	2	CO6	K6	PO3
1g.	Compare between the asynchronous and synchronous counters?	2	CO4	K5	PO5
1h.	Demonstrate performance criteria for the D/A converter?	2	CO4	K3	PO4
1i.	List the application of various types of	2	CO4	K1	PO1

1j.	What are the sizes of MAR and MBR for a 64K x 8 bit memory?	2	CO1	K1	PO1
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Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 5 Marks)

Q NO	Questions	Marks	COs	KL	PO
2a.	Write Characteristics of digital ICs.	2	CO1	K3	PO1
2b.	Explain how AND, OR, NOT gates can be realized using NAND gates alone.	3	CO1	K2	PO2
3a.	Draw the logic circuit of 1:4 demultiplexer	2	CO6	K6	PO5
3b.	Discuss its working.	3	CO6	K2	PO5
4a.	Discuss working the Master -slave JK flip-flop with circuit diagram.	3	CO6	K2	PO5
4b.	How does a J K flip-flop differ from SR flip-flop in its basic operation?	2	CO6	K4	PO2
5a.	Explain the meaning of counter.	2	CO4	K2	PO2
5b.	Draw the circuit of a 4-stage ripple counter and show the waveform at the various output stages.	3	CO4	K6	PO3
6a.	Discuss the simultaneous A/D converter to convert 0 to V volts analog voltage to 3 bit digital output.	3	CO2	K4	PO5
6b.	Draw the logic diagram also.	2	CO2	K6	PO3
7a.	What is a memory unit?	2	CO5	K1	PO1
7b.	Explain with block diagram the concept of memory using registers connected to memory unit.	3	CO5	K2	PO5

Section C (Answer any THREE out of FIVE) – 30 Marks-(Each question Carry 10 Marks)

Q NO	Questions	Marks	COs	KL	PO
8a.	Solve the given hexadecimal numbers into its equivalent B.C.D number (i) 5a6bH (ii) 2cd51H	4	CO3	K4	PO4

8b.	Solve the following decimal numbers to gray code: (i) 8975 (ii) 23501	4	CO3	K4	PO4
8c.	Solve the following decimal numbers to XS3 (excess -3) code: (i) 1026 (ii) 4375	2	CO3	K4	PO4
9a.	Minimise the following function using K-map and realize it with NAND gates only. $F(W, X, Y, Z) = \sum_{\phi} (0,2,3,5,6,8,9) + \sum_{\phi} (10,11,12,13,14,15)$	4	CO4	K3	PO4
9b.	Prove that $A\bar{B} + \bar{A}B = \overline{A.B} + \overline{\bar{A}.\bar{B}}$	3	CO4	K5	PO1
9c.	Express the following Boolean function in PS form. $F = A \cdot \bar{B} + \bar{B} \cdot C$	3	CO4	K2	PO3
10a.	Give the difference between a parallel in parallel out shift register and parallel in serial out shift register?	2	CO1	K2	PO1
10b.	Describe the working of parallel in parallel out shift register.	5	CO1	K2	PO5
10c.	Explain how number can be shifted in or out from this register.	3	CO1	K2	PO5
11a.	Draw the schematic diagram of a resistive divider D/A converter.	3	CO2	K6	PO3
11b.	Explain operation of resistive divider D/A converter.	4	CO3	K2	PO2
11c.	Mention the drawbacks of this converter.	3	CO3	K2	PO1
12a.	What are programmable logic devices?	2	CO5	K1	PO1
12b.	Name popularly known PLDs.	2	CO5	K1	PO1
12c.	Explain ROM as a PLD in detail.	6	CO5	K2	PO2