PART-A

*(Answer 05 questions. Each question carries **2 marks**)*

[5x2= 10]

Q.No	Question	Marks	Bloom's Level
Q.1	a) List the advantages and disadvantages of full wave rectifier.	[2]	L1
	b) Define base width modulation.	[2]	L1
	c) Explain about biasing MOSFET.	[2]	L2
	d) How fast can the output of an op-amp change by 10V, if its slew rate is 1V/μs.	[2]	L2
	e) What are the advantages of active filters?	[2]	L1

END OF PART A

PART-B

*(Answer **05** full questions. Each question carries **12 marks**)*

Q.No	Question	Marks	Bloom's Level
Q.2(a)	Explain the V-I characteristics of Zener diode and also explain Zener breakdown.	[06]	L2
(b)	A sinusoidal voltage whose V_m=26V is applied to half wave rectifier. The diode may be considered to be ideal and R_L=1.2KΩ is connected as load. Find out peak value of current, r.m.s value of current, dc value of current and ripple factor.	[06]	L3
	OR		
Q.3(a)	The voltage across a Si diode at room temperature of 300K is 0.71V when 2.5mA current flows through it. If the voltage increases to 0.8V, estimate the new current.	[06]	L3
(b)	Illustrate the operation of negative clamper with neat sketch.	[06]	L2
Q.4(a)	Explain input and output characteristics of common base configuration of BJT.	[06]	L2
(b)	Compare the characteristics of CB, CE and CC configurations of transistors.	[06]	L4
	OR		
Q.5(a)	Summarize in detail how BJT acts as an amplifier.	[06]	L2
(b)	Define stability parameters S, Sβ and Sv and derive the expression for stability factor S.	[06]	L2

Q.6(a)	Explain the characteristics of depletion mode MOSFET.	**[06]**	**L2**
(b)	Explain the common drain configuration of MOSFET and derive for Av, Ri and Ro.	**[06]**	**L2**
	OR		
Q.7(a)	Explain the common gate configuration of MOSFET and derive for Av, Ri and Ro.	**[06]**	**L2**
(b)	Derive expressions for voltage divider biasing in MOSFET.	**[06]**	**L2**
Q.8(a)	Compare Class A and Class B power amplifiers.	**[06]**	**L4**
(b)	Explain ideal characteristics of an Op-amp.	**[06]**	**L2**
	OR		
Q.9(a)	Describe the operation of class A series fed amplifier and calculate efficiency.	**[06]**	**L2**
(b)	Discuss the factors input offset voltage, input bias and input offset currents.	**[06]**	**L2**
Q.10(a)	Derive the expression for RC phase shift oscillator using op-amp.	**[06]**	**L2**
(b)	Explain the circuit operation to generate square waveform with neat sketches using 741IC.	**[06]**	**L2**
	OR		
Q.11(a)	Derive the equation for time period T in a monostable multivibrator using 741IC.	**[06]**	**L2**
(b)	Using functional diagram , explain how low and high regulation done in IC723 with figures.	**[06]**	**L4**