DEC 2018 / ENDSEM U118-104A (BE-FS)

F. Y. B. TECH. (COMMON) (SEMESTER – I/II)

COURSE NAME: Basic Electronics Engineering ETI0174A

(2017 PATTERN)

Q.NO	Sub Q.NO	Marking Scheme	Marks	Difficulty Level	Cognitive level	CO Mapped
Q1	a)	State Demorgan's theorems,: 2M Prove Demorgan's theorems,: 2M Draw the logical diagrams.: 2M	[6]	M	Knowledge / Comprehension	CO4
	b)	Construction of NOT gate using NAND gate [2M] Construction of AND gate using NAND gate [2M] Construction of OR gate using NAND gate [2M]	[6]	M	Comprehension	CO4
	c)	Explanation of SR flip flop with block diagram [2M] Truth table [2M]	[4]	L	Comprehension	CO4
		OR				
Q2	a)	Definition of NAND and NOR gate [2M] Truth table of NAND and NOR gate [2M] Logical expression [2M]	[6]	M	Comprehension	CO4
	b)	With correct truth table: 4:1 MUX block diagram and working: 3M 1:4 De-MUX block diagram and working:3M	[6]	H	Comprehension /Application	CO4
	c)	State and prove Commutative and Associative laws used in Boolean Algebra.	[4]	L	Knowledge	CO4
Q3	a)	Block diagram of basic instrumentation system: 3M Explanation of the block diagram of basic instrumentation system: 3M	[6]	M	Knowledge	CO5

	b)	Compare active and passive transducer. Minimum four points: 4M	[4]	L	Knowledge	CO5
	c)	Explanation of four characteristics of transducer: 4M	[4]	L	Knowledge	CO5
		OR				
Q4	a)	RTD meaning:1M Construction and working principle:3M Correct Wheatstone bridge with RTD: 2M	[6]	M	Knowledge and Comprehension	CO5
	b)	Primary and secondary transducer explanation: 2M Two examples of each : 2M	[4]	L	Knowledge	CO5
	c)	What is transducer [2M] Its classification based on its output quantity measured [2M]	[4]	L	Comprehension	CO5

Q.5 Answer the following questions

1.	If the ac supply is 60 Hz, what will be the ripple frequency out of the full-wave rectifier? a) 50 Hz b) 60 Hz c) 120 Hz d)100 Hz Ans: c	[2]
2.	The no load output voltage of half wave rectifier is a) 0.318 V_{peak} b) 2 V_{peak} c) 0.636 V_{peak} d) 0.5 V_{peak} Ans: c	[2]
3.	For what kind of amplifications, the active region of the common-emitter configuration is used? a) Voltage b) Current c) Power d) All of the above Ans: d	[2]
4.	In the active region for a CE transistor configuration, the collector-base junction is _____-biased, the base-emitter is _____-biased. a) reverse, forward b) forward, reverse c) forward, forward d) reverse, reverse Ans: a	[2]

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5.	Which of the following devices does not have a cathode terminal? a) SCR b) PN Junction Diode c) Triac d) Zener diode Ans: c	[2]
6.	If I_E=5.34mA , I_B= 475 μA, current gain beta of BJT will be a) 10.24 b) 9.24 c) 10.48 d) 11.24 Ans: a	[2]
7.	Which of the following applies to MOSFETs? a) Current controlled device b) Device with low input impedance c) Voltage controlled device d) None of the above Ans: a	[2]
8.	It is the insulating layer of _____ in the MOSFET construction that accounts for the very desirable high input impedance of the device. a) SiO b) GaAs c) SiO_2 d) HCl Ans: c	[2]
9.	An non inverting operational amplifier with gain of 101 is applied with 1V input voltage, the output voltage will be a) +Vcc b) –Vcc c) 101 V d) -101 V Ans: a	[2]
10.	The 7805 regulator IC provides _____ a) 5V b)-5V c)12V d)-12V Ans: a	[2]