CODE NO:- Z-248
FACULTY OF ENGINEERING & TECHNOLOGY
S.E (EEP/EE/EEE) Year Examination -June – 2015
Analog And Digital Circuits
(Revised)

[Time: Three *Hours*]   [Max. Marks:80]

"Please check whether you have got the right question paper."
    i)   Q. No.1 and Q.No.6 are compulsory.
    ii) Attempt from each section <u>any two</u> questions from remaining questions.
    iii) Assume suitable data wherever necessary.
    iv) Figures to the right indicate full marks

SECTION-A

Q.1   Solve <u>Any five</u>   10
    a) Draw the output characteristics of CB mode and label all variables.
    b) List advantages and disadvantages of FET over bi-polar Transistor.
    c) Draw the symbol of PNP and NPN Transistor and label.
    d) List applications of comparator.
    e) What is multivibrator?
    f) Define voltage regulation?
    g) What is zero-crossing detector?
    h) Draw the circuit diagram of integrator.

Q.2 a) With the neat diagram explain the working of two-stage Rc-coupled amplifier .   08
     b) Compare CB,CC and CE configuration of BJT amplifier.   07

Q.3 a) Draw the block diagram of operational amplifier and explain it in details .   08
     b) Draw and Explain with suitable circuit diagram and wave forms the schmitt-trigger using op-amp.   07

Q.4 a) Explain pin-diagram of IC555 with neat sketch.   07
     b) What is peak detector ? Explain with circuit diagram and output wave forms .   08

Q.5   Write short note on (<u>any three</u>)   15
    a) Instrumentation Amplifier
    b) Active filter
    c) V to I convertor
    d) Class –A Amplifier .

SECTION-B

Q.6   Solve <u>any five</u>   10
    a) What arelogic gates ?
    b) Convert 0.640625 decimal number in its octal equivalent.
    c) Realize using logic gates given Boolean function .$y=ABC+B\bar{C}D + \bar{A}BC$
    d) Construct the K-map for the following truth table

Input		o/p
0	0	0
0	1	0
1	0	0
1	1	1

    e) Define up-down counter.
    f) Give the turth table and graphic symbol of D-flipflop
    g) Define MUX and Draw the sybmol for 2:1 MUX.
    h) Define static and dynamic RAM.

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Q.7	a)	Use K-map to minimize the following sop expression. $ABCD + AB\bar{C}\bar{D} + A\bar{B}\bar{C}\ \bar{D}\ + +\bar{A}\bar{B}CD + A\bar{B}C D + \bar{A}\bar{B}C\bar{D} + ABC\bar{D} + A\bar{B}C\bar{D}$.	08
	b)	Explain the operation of J-K Flip, Flop with logic diagram and truth table .	07

Q.8	a)	Represent decimal no. 8620 in	08
		i) BCDcode	
		ii) Excess-3code	
		iii) Hexedecimal	
		iv) Octal no	
	b)	Design 4-bit up-down Counter.	07

Q.9	a)	With the help of neat sketch explain 8:1multiplexer with truth table.	08
	b)	Explain the operation of PROMS and EPROMS.	07

Q.10		Write short note on (<u>Any three</u>)	15
	a)	Shift Registers	
	b)	Demorgon's theory	
	c)	Gray code	
	d)	Twisted ring counter.	

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