Total No. of Questions : 8]

SEAT No. :

P1003

[Total No. of Pages : 2

[4457]-174
S.E. (Electrical)
ANALOG & DIGITAL ELECTRONICS
(2012 Course) (Semester -I) (203143)

Time : 2 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Attempt Q.No. 1 or 2, Q.No. 3 or 4, Q.No. 5 or 6, Q.No. 7 or 8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***
5) ***Use of non programmable calculator is permitted.***

Q1) a) Perform the subtraction **[6]**

i) $(0011.1001)_2$- $(0001.1110)_2$ using 1's complement method.

ii) $(52)_{10}$- $(65)_{10}$ using 2's complement method.

b) Draw and explain the working of Universal shift register. **[6]**

OR

Q2) a) Draw and explain four bit Johnson counter and also draw its timing diagram. **[6]**

b) Minimize the following Boolean expression using K-map and realize it using the basic gates. $Y=\Sigma m(1,3,5,9,11,13)$. **[6]**

Q3) a) Define the characteristics of practical OP-AMP. **[6]**

b) Draw and explain circuit diagram of square wave generator with waveforms. **[7]**

OR

Q4) a) Explain operation of full wave precision rectifier. **[7]**

b) Draw and explain internal structure of IC 723. **[6]**

Q5) a) Draw and explain RC coupled amplifier with frequency response. **[6]**

b) Define important parameters of JFET. **[6]**

OR

P.T.O.

Q6) a) Write a short note on PUSH PULL amplifier. **[6]**

b) Draw and Explain Transfer characteristics of JFET. **[6]**

Q7) a) Explain the working of single phase half wave rectifier with RL load with neat sketch and draw its waveform. **[6]**

b) The single phase full wave rectifier supplies very high inductive load. The turn ratio of transformer is unity. Determine the harmonic factor of the input current and the input power factor of the rectifier. **[7]**

OR

Q8) a) What is need of filter circuit? Explain LC filter. **[7]**

b) Explain the working of single phase full wave rectifier with R load with neat sketch and draw its waveform. **[6]**

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