PB3621

[6261]-26

S.E. (Electronics /E&TC)
ELECTRONIC CIRCUITS
(2019 Pattern) (Semester-III) (204181)

Time : 2½ Hours]
[Max. Marks : 70

Instructions to the candidates:

1) *Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data if necessary.*
4) *Neat diagrams must be drawn wherever necessary.*

Q1) a) Define Voltage regulation. Explain the any three performance parameters of voltage regulator. **[6]**

b) IC Voltage Regulator using IC 317, Calculate values of R2 for the output voltage l0v to 20v, assume R1= 240 Ω and Iadj = l00μA. **[6]**

c) Compare Linear power supply and Switch Mode Power Supply (SMPS). **[6]**

OR

Q2) a) Draw and explain the block diagram of Power Supply. **[6]**

b) IC Voltage Regulator using IC 317, Calculate values of R2 for the output voltage 5v to l0v, assume R1= 240 Ω and Iadj = l00μA. **[6]**

c) Write a Short note on "Low drop out Voltage regulator". **[6]**

Q3) a) Draw Block diagram of OP - AMP. and explain the function of each block. **[5]**

b) Define the following Characteristics of OPAMP **[6]**

i) Input offset voltage

ii) Slew Rate

iii) CMRR (Common Mode Rejection Ratio)

c) Compare Concept of Voltage Series and Voltage Shunt in OP AMP. **[6]**

OR

P.T.O.

Q4) a) List types of differential amplifiers. Draw dual input balanced output differential amplifier. **[5]**

b) State Ideal and Typical values of OP AMP parameters (IC 741). **[6]**

c) Explain with circuit diagram necessity of level shifting in OP AMP. **[6]**

Q5) a) Draw and explain Inverting amplifier. Draw its input and output waveforms. **[6]**

b) Design a Practical differentiator circuit for the input signal having maximum frequency of operation 250 Hz. **[6]**

c) Draw and explain Inverting Schmitt trigger circuit using OP AMP. **[6]**

OR

Q6) a) Compare Inverting and Non-Inverting amplifier in OP AMP. **[6]**

b) Design a Practical Integrator circuit to operate at f=4 KHz and gain equal to 4. **[6]**

c) Draw and explain square wave Generator using OP AMP. **[6]**

Q7) a) Draw and explain V to I Converter using grounded load using OP AMP. **[5]**

b) Draw and explain the circuit of R/2R DAC using OP AMP. **[6]**

c) With the help of neat block diagram explain operation of PLL. **[6]**

OR

Q8) a) Draw and explain I to V Converter using OP AMP. **[5]**

b) Draw and explain the circuit of binary weighted resistor DAC using OP AMP. **[6]**

c) Define the following specifications of ADC **[6]**

    i) Resolution

    ii) Accuracy

    iii) Conversion time

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