B.TECH. SEM -VI ELECTRONICS 2014 COURSE (CBCS) :
WINTER - 2017
SUBJECT : ELECTRONIC CIRCUIT DESIGN

Day : **Friday** Time **10.00 AM TO 01.00 PM**
Date : **24/11/2017** **W-2017-2215** Max. Marks : 60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.
4) Use of non-programmable calculator is allowed.

Q.1 Describe the following: **(10)**
i) Integrated circuits (ICs) **ii)** Wire/cable selection

OR

Q.1 **a)** Classify the transformers and explain any one type. **(06)**
b) Explain in detail the grounding techniques. **(04)**

Q.2 Design an inductor filter to provide 100 V output voltage at 300 Ω load with peak ripple voltage not exceeding 10 V. Use full wave rectifier circuit. **(10)**

OR

Q.2 **a)** Draw circuit of capacitor filter and explain its working. Also draw its output voltage waveform. **(06)**
b) Draw and explain L-filter. **(04)**

Q.3 Write important specifications of regulator IC-723. Also design a voltage regulator using IC-723 for $V_0 = 5$ V and $I_{L(max)} = 80$ mA. Assume $V_{sense} = 0.7$ V and $V_{ref} = 7$V. **(10)**

OR

Q.3 **a)** Design an adjustable voltage regulator using LM 317 to satisfy the following specifications: **(06)**
Output voltage $V_0 = 5$ to 12 V
Output current $I_0 = 1.0$ A
(given : $I_{ADJ} = 100\ \mu A$, $R_1 = 240\ \Omega$ $V_{ref} = 1.25$ V.)
b) Describe LM 317 as a three terminal voltage regulator. **(04)**

Q.4 Draw the Block diagram of SMPS. Also write design steps for SMPS. **(10)**

OR

Q.4 **a)** Give the classification of SMPS. Explain any one in detail. **(06)**
b) Compare linear pressure supply and SMPS. **(04)**

Q.5 **a)** Describe sample and hold circuit for DAS. **(06)**
b) Write a short note on data logger. **(04)**

OR

Q.5 **a)** Draw and explain single channel DAS. **(06)**
b) Write the applications of DAS. **(04)**

Q.6 Draw basic circuit of "audio power amplifier" using LM380 and explain it. Also write applications of LM380. **(10)**

OR

Q.6 **a)** Draw and explain graphic equalizer circuit. **(06)**
b) Write specification LM380. **(04)**

* * *