Total No. of Questions – [3]

Total No. of Printed Pages: 02

G.R. No.	

PAPER CODE	U222-243(ESE)

May 2022 (ENDSEM) EXAM

S.Y. B. TECH. (SEMESTER - II) E&TC

COURSE NAME: ANALOG CIRCUITS

COURSE CODE: ETUA22203

(PATTERN 2020)

Time: [1Hr]

[Max. Marks: 30]

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **'a' part of every question is compulsory**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q.1 a) Discriminate between active and passive filters with the help of various electronics parameters [4]

b) Sketch the circuit diagram of second order Butterworth Low Pass Filter. Also draw the frequency response graph of it and write the formula to calculate its cut off frequency. [6]

OR

b) Calculate the gain of first order LPF and second order LPF at frequencies 100 Hz and 2KHz. Cut off frequency f_H = 1 KHz and maximum gain of the filter is 10. [6]

Q2 a) A 5 bit R-2R ladder network with reference voltage of 10 V is given. Calculate: 1) Full scale output voltage for digital input 11111 2) Output voltage for digital input 11001. [4]

b) Sketch the neat circuit diagram for Voltage To Current Converter with Grounded Load and derive the complete expression for the load current (I_L). [6]

OR

b) Sketch the neat circuit diagram of 2 bit Flash ADC and explain its working along with advantages and disadvantages. [6]

Q.3 a) For a PLL 565, the free running frequency is 2.5 KHz, +VCC= +10V, -VEE= -10V. If demodulation capacitor C_2=10μF. Calculate Lock range and Capture range. [4]

b) Sketch the block diagram of basic Phase Lock Loop (PLL) and give the significance of each block. [6]

OR

b) Justify with block diagram that how PLL is used as FM demodulator. [6]