BE Semester-_5th___ (Biomedical Engineering) Question Bank

(BM- 402 ADVANCE ELECTRONICS)

All questions carry equal marks (10 marks)

Q.1	Explain ideal differential amplifier and define it's gain.
Q.2	Explain emitter coupled differential amplifier.
Q.3	Explain characteristics of a differential amplifier.
Q.4	Explain important characteristics of the ideal OP-AMP.
Q.5	Explain in detail different configuration of differential amplifier.
Q.6	Explain FET differential amplifier.
Q.7	Explain differential amplifier using constant current bias.
Q.8	Explain differential amplifier using current mirror circuit.
Q.9	Write short note on Cascade differential amplifier stages.
Q.10	Explain different open-loop configuration of OP-AMP.
Q.11	Explain in detail voltage series and voltage shunt feedback configuration of OP-AMP.
Q.12	Explain in detail current series and current shunt feedback configuration of OP-AMP.
Q.13	Explain in detail voltage follower.
Q.14	Explain Current to Voltage Converter and voltage to current converter.
Q.15	Write short note on inverting and non-inverting OP-AMP.
Q.16	Explain INPUT OFFSET VOLTAGE of OP-AMP.
Q.17	Explain INPUT OFFSET CURRENT of OP-AMP.
Q.18	Explain INPUT BIAS CURRENT of OP-AMP.
Q.19	Describe open-loop frequency response of OP-AMP.
Q.20	Describe close-loop frequency response of OP-AMP.
Q.21	Write short note on Instrumentation Amplifier.
Q.22	Describe application of OP-AMP as summing and averaging amplifier.
Q.23	Write short note on log and anti log amplifier.
Q.24	Explain OP-AMP as integrator.
Q.25	Explain OP-AMP as differential.
Q.26	Design a differentiator to differentiate an input signal that varies in frequency from 10Hz to about 1 Hz. If a sine wave of 1V peak at 1000Hz is applied to this differentiator, draw its output waveform.
Q.27	Explain in detail designing butterworth low-pass filter using OP-AMP.
Q.28	Explain in detail designing butterworth high-pass filter design using OP-AMP.
Q.29	Explain in detail designing butterworth bandpass and band reject filter using OP-AMP.
Q.30	Design a low pass filter at a cutoff frequency of 1 KHz with a passband gain of 2. Using the frequency scaling technique, convert the 1KHz cutoff frequency of the low pass filter to a 1.6KHz cutoff frequency.
Q.31	Design a second-order low-pass filter at a high cutoff frequency of 2 kHz. Draw the frequency response of this filter.
Q.32	Design a second-order high-pass filter at a high cutoff frequency of 1 kHz with a

	passband gain of 2. Draw the frequency response of this filter.
Q.33	Design a wide band-pass filter with f_L=200Hz, f_H=kHz, and a passband gain=4. Draw the frequency response plot of this filter and calculate the value of Q for the filter.
Q.34	Design the bandpass filter with passband of 0.5 to 5kHz with gain of 2.
Q.35	Write short note on OSCILLATORS.
Q.36	Write short note on Phase shift Oscillator and wein Bridge Oscillator.
Q.37	Explain quadrature Oscillator.
Q.38	Explain 555 timer as astable, bistable, monostable multivibrator.
Q.39	Describe frequency response of BJT and JFET.
Q.40	Explain in detail emitter follower.