

BE Semester-VII (Biomedical Engineering) Question Bank

(BM-702 Electronic System Design)

All questions carry equal marks (10 marks)

Q.1	Explain power electronic system in detail with neat block diagram.
Q.2	State Faraday's Law of Electromagnetic Induction. Explain the process of electromechanical energy conversion.
Q.3	Enlist and explain the control technique for chopper.
Q.4	Draw & explain structure and operation of Thyristors.
Q.5	What is Microstepping? Explain in detail Full Step & Half Step operation.
Q.6	Give the definition & importance of EMC. Explain different E- field & H- field coupling.
Q.7	Explain Gate drive circuit of Thyristors.
Q.8	Explain UJT Relaxation Oscillator.
Q.9	Explain electromagnetic and solid state relay.
Q.10	Explain static & dynamic characteristics of SCR.
Q.11	Write a short note on Solenoid & Solenoid Valves.
Q.12	Explain two transistor model of Thyristors.
Q.13	Write a short note on Class-E resonant inverter.
Q.14	Explain the construction & working principle of PM step motor.
Q.15	Enlist & explain different types of noise coupling mechanisms.
Q.16	Write a short note on PWM inverter.
Q.17	Explain Static Anode-Cathode Characteristics of SCR.
Q.18	What do you understand by "inverter"? Explain series and parallel inverter in detail.
Q.19	Explain the construction & working principle of Hybrid step motor.
Q.20	Explain Torque-Speed characteristics of a Stepper Motor.
Q.21	Write a short note on series resonance inverter.
Q.22	What is commutation Failure? Explain the class-C Commutation technique in detail.
Q.23	Explain step down chopper in detail. Derive the equations for its duty cycle.
Q.24	Enlist & explain different turn on methods for SCR.
Q.25	Write a detailed note on Grounding & types of Grounds.
Q.26	Write a short note on IGBT.
Q.27	Explain the snubber circuit used for the SCR turn on process.
Q.28	Explain applications and features of multilevel inverter.
Q.29	Explain series and parallel operation of SCR and the Need of equalizing network.
Q.30	Write a short note on Power MOSFET.
Q.31	Draw & explain the forward characteristics of SCR.
Q.32	Enlist and explain various types of power diode.
Q.33	What is step up chopper? Draw & explain in detail with necessary diagrams.
Q.34	Enlist various Turn Off methods of SCR. Explain Class D Commutation.
Q.35	What is SMPS? Explain it with block diagram.
Q.36	Write a short note UPS.
Q.37	Describe different grounding methods.
Q.38	What is commutation? Explain class - C commutation with necessary waveform in detail.
Q.39	Write a detailed note on various drive circuits used for Stepper Motors.

Q.40	Explain Electromagnetic Compatibility & Electromagnetic Interference in detail. Also explain the basic difference between the two.
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