BSc MECs III Semester Question Bank

Sub: Electronics Paper: III Sub title: Analog circuits

UNIT: I

Long answer type questions:

1. What is rectifier? Draw the circuit of full wave rectifier and derive the expression for efficiency and ripple factor.
2. Draw the circuit of half wave rectifier and derive the expression for the efficiency of ripple factor?
3. Explain the working of bridge wave rectifier with neat diagram.
4. What is ripple factor? Discuss the performance of inductance and capacitance filters with neat diagram derive the expressions for ripple factor.
5. Draw the circuit diagram of L-section filter and discuss its working. Derive an expression for ripple factor.
6. Explain the working of pie-section filter and derive the expression for the ripple factor.
7. Explain about the harmonic components in the rectified output.
8. Compare full wave and bridge wave rectifiers.

Short answer type questions:

1. What is PIV in rectifiers?
2. Calculate the ripple factor of full wave rectifier.
3. Define the terms a) ripple factor b) rectifier efficiency c) regulation
4. List out the advantages of bridge wave rectifier.
5. What is filter? List out different types of filters.
6. What is Voltage regulation?

UNIT: II

Long answer type questions:

1. Explain the block diagram of regulated power supply.
2. Explain the working of series transistor regulated power supply with neat diagram.
3. Explain the principle and working of SMPS with neat diagram.
4. Explain three terminal voltage regulators in detail.
5. What is UPS? Explain different types of UPS in detail.
6. Draw a neat sketch of a Zener diode regulator and explain how it provides a constant output.

Short answer type questions:

1. What do you mean by an unregulated and a regulated power supply?
2. Explain the working of transistor shunt regulator with neat diagram.
3. What is a voltage regulator?
4. Draw the block diagram of regulated power supply and explain.
5. Explain the differences about linear mode power supply and switch mode power supply.

UNIT: III

Long answer type questions:

1. Explain the Classification of amplifiers.
2. Explain the working of hybrid pie model of a transistor with neat diagram.
3. Draw the circuit of RC coupled CE amplifier and explains its frequency response curve at different frequency ranges.
4. What is feed back? Define negative and positive feedback. Explain feedback amplifier with a neat diagram.

5. Explain the effect of negative feedback on different factors.
6. Explain the principle of feedback. Obtain an expression for the gain of an amplifier using negative feed back.
7. Explain the working of Emitter follower circuit with neat diagram.
8. Explain the working of Darlington pair circuit and list out its advantages.

Short answer type questions:
1. Mention the advantages of negative feedback.
2. What are the different types of feed back?
3. What is Darlington pair ? Give its merits and demerits.
4. Explain the different types of feedback network connections.
5. Draw the circuit diagram of Emitter follower circuit.

UNIT: IV

Long answer type questions:

1. Explain the Barkhausen criterion for sustained oscillations.
2. Explain the working of Wein bridge oscillator and mention its advantages .
3. Explain the working of Colpitts oscillator and explain its working.
4. Discuss the working of Hartley oscillator. Derive an expression for the frequency of Oscillation.
5. What are the differences between RC and LC oscillators?
6. Draw the circuit diagram of a stable multivibrator and explain its working.
7. Draw the circuit diagram of Môn stable multivibrator and derive the expression for time period.
8. Explain the working of bi-stable multivibrator.

Short answer type questions:

1. What are multivibrators? How multivibrators are classified?
2. Discuss the criterion of oscillations in a feed back amplifier.
3. Draw the circuit diagrams of RC phase shift and Wein's bridge oscillators.
4. Differentiate between an amplifier and oscillator.
5. Explain the types of LC oscillators.