

## Faculty of Science

## B.Sc. (Electronics) II Year, CBCS - III Semester Examinations, Dec 2017

## Paper-III (Analog Circuits)

Time: 3 hours

Max Marks: 80

## Section-A

- I. Answer any **Five** questions from the below. (5x4=20 Marks)
1. What is Filter? Explain shunt Capacitor Filter.
  2. A Transformer with 20V secondary voltage is supplied to a half wave rectifier having load resistance 200 Ohms. Determine the d.c output voltage, PVI and efficiency. The diode resistance is 25 ohms.
  3. Discuss the working of transistor shunt voltage regulator.
  4. Two power supplies 'A' and 'B' are available in the market. Power supply 'A' has no load voltage 10V and 9V. Power supply 'B' has no load and full load voltages 10V and 7.5V. Find the percentage voltage regulation of power supplies 'A' and 'B' which is better power supply?
  5. Explain the effect of coupling and emitter bypass capacitors on frequency response.
  6. Draw the block diagram of feedback amplifiers and explain its different blocks.
  7. Give the circuit diagram of Hartley Oscillator and explain its working.
  8. What is a multivibrator ? Name the different classes of multivibrators and briefly distinguish them.

## Section-B

- II. Answer all questions. (4x15=60 Marks)
9. (a) Explain the working of bridge rectifier with a neat circuit. Derive an expression for its efficiency.
- (OR)
- (b) What is ripple factor? Discuss the performance of the inductor filter. Derive an expression for ripple factor.
10. (a) Define voltage regulation in power supplies. Explain about three terminal IC regulators with block diagram. What are the advantages of three terminal IC regulators?

(OR)

(b) Explain the principle and working of switch mode power supply(SMPS). What are the advantages of SMPS?

11.(a) Draw the circuit diagram of RC coupled Amplifier and discuss its frequency response.

(OR)

(b) What is negative feedback in amplifiers? Explain the effect of negative feedback on (i) Gain (ii) Noise (iii) Distortion.

12.(a) What is Barkhausen criterion ? Explain Voltage gain,Bandwidth,input and output impedances

(OR)

(b) Draw the circuit diagram of monostable multivibrator and explain its operation.

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