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**SUBJECT CODE NO:- B-2045**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y. (Sem-I) Examination Oct/Nov 2019**  
**Electronics Paper-I**  
**Network Theorems Semi-Conductor Devices**

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

N.B

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable diagram.

Q.1 Attempt any one:

- a) What is p-n junction? Discuss its action in forward and reverse bias condition. 20
- b) With neat circuit diagram and graph explain the output characteristics of JFET. 20

Q.2 With a neat circuit diagram the working of transistor in common base configuration. 20

OR

Write short notes on (any four) 20

- 1) Transformer
- 2) Relation between  $\alpha$  and  $\beta$
- 3) Fixed positive linear regulators
- 4) LED
- 5) Thevenin's theorem
- 6) Zener diode

Q.3 Attempt the following multiple choice questions by choosing appropriate answers. 10

- 1) Which is the active element
  - a) Switch
  - b) Transistor
  - c) Resistor
  - d) Relays
- 2) If p-n junction is forward biased its resistance is
  - a) Large
  - b) Very small
  - c) Infinite
  - d) Zero
- 3) A knee voltage of a silicone p-n junction is -----
  - a) 0.3 v
  - b) 7 volt
  - c) 0.7
  - d) 3 volt
- 4)  $I_n$  a transistor -----
  - a)  $I_C = I_E + I_B$
  - b)  $I_B = I_C + I_E$
  - c)  $I_E = I_C - I_B$
  - d)  $I_E = I_C + I_B$

- 5) The base of a transistor is ----- doped.
- a) Heavily
  - b) Moderately
  - c) Lightly
  - d) None of the above
- 6) The most commonly used transistor arrangement is ----- arrangement.
- a) Common emitter
  - b) Common base
  - c) Common collector
  - d) None of the above
- 7) The collector base junction in a transistor has -----
- a) Forward bias at all times
  - b) Reverse bias at all times
  - c) Low resistance
  - d) None of the above
- 8) A p n junction that radiates energy as light instead of heat is called a
- a) LED
  - b) Photo-diode
  - c) Photo cell
  - d) Zener diode
- 9) A photo –diode is normally
- a) Forward biased
  - b) Reverse-biased
  - c) Neither forward nor reverse
  - d) None of the above
- 10) A zener diode is ----- device
- a) A none linear
  - b) A linear
  - c) An amplifying
  - d) None of the above