

**C.U.SHAH UNIVERSITY**

Wadhwan City

Subject Code : 5SC01PHC4  
 Subject Name Electronic Devices and circuits  
 Branch/Semester:- M.Sc(Physics)/I  
 Examination : Remedial

Summer Examination-2014

Date: 19/06/2014

Time:10:30 To 1:30

**Instructions:-**

- (1) Attempt all Questions of both sections in same answer book / Supplementary
- (2) Use of Programmable calculator & any other electronic instrument is prohibited.
- (3) Instructions written on main answer Book are strictly to be obeyed.
- (4) Draw neat diagrams & figures (If necessary) at right places
- (5) Assume suitable & Perfect data if needed

**SECTION-I****Q-1 All Questions are compulsory****7**

- a) Give the name of trivalent impurity.
- b) Give the definition of breakdown voltage.
- c) Zener diode is always connected in ----- bias.
- d) The phase difference between the output and input voltages in CE amplifier is .....
- e) What is the purpose of a coupling capacitor in a transistor amplifier?
- f) For highest power gain, which transistor amplifier is used?
- g) Draw the circuit diagram of CB configuration.

**Q-2 Answer the following .**

- a) Explain the operation of Zener diode in reverse biased condition. **5**
- b) Derive diode current equation. **5**
- c) Define contact potential. How does it arise? **4**

**OR**

- a) Discuss the forward bias characteristic of a P-N junction diode. **5**
- b) Explain emitter follower configuration with circuit diagram. **5**
- c) Explain diode capacitance. **4**

**Q-3 Answer the following**

- a) Explain transistor CE configuration with circuit diagram. **7**
- b) Explain Ebers-Moll Transistor Model. **7**



**OR**

- a) Explain Zener breakdown and Avalanche breakdown. 7
- b) Explain CB amplifiers using hybrid parameter equivalent circuits. 7

**SECTION-II**

**Q-4 All Questions are compulsory** 7

- a) Define pinch off voltage of JFET.
- b) LED is always connected in ----- bias.
- c) What is the full name of MOSFET?
- d) How many junctions are in SCR?
- e) What is the principle of solar cell?
- f) Draw the symbol of UJT.
- g) What is the use of TRAIC?

**Q-5 Answer the following in detail.**

- a) Explain construction and characteristic of MOSFET. 5
- b) Explain JFET common source amplifier. 5
- c) Describe : construction and application of LDR. 4



**OR**

- a) Write a short note on photo diode. 5
- b) Write a short note on UJT. 5
- c) Describe: construction and application of thermistor. 4

**Q-6 Answer the following.**

- a) Explain the construction, operation and characteristic of SCR. 7
- b) Write a short note on DIAC 7

**OR**

- a) Explain the working, construction and application of a solar cell. 7
- b) Explain with construction, operation and characteristic of JFET. 7

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