BASIC ELECTRONICS

2ND Exam/ECE/ETV/ECEII/COMP/CSE/IT/EEE/0664/May'17

Duration: 3Hrs **M. Marks: 75**

SECTION A

Q.1 Fill in the blanks: **15x1=15**

a. N-type semiconductors are formed by adding _____ impurity to a pure semiconductor.
b. In Intrinsic semiconductors number of electrons are_____ to number of protons.
c. Conduction in P-type semiconductor is due to movement of _____
d. The value of knee voltage for silicon diode is _____ volt.
e. A Photodiode is optimised for its sensitivity to _____ .
f. Zener diode is made to operate in _____ region.
g. A transistor contains _____ PN junctions.
h. The emitter of a transistor is doped _____.
i. The value of collector current of a transistor is _____ to emitter current.
j. In transistor, leakage current mainly depends on _____.
k. The ideal value of stability factor is _____.
l. The gain stability of an amplifier circuit can be improved by using _____ feedback.
m. For a transistor to work as an amplifier, its operating point should lie in _____ region.
n. FET is a _____ terminal semiconductor device.
o. MOSFET stands for _____.

SECTION-B

Q.2. Attempt any five Questions. **6x5=30**

a. How N-type semiconductor is formed?
b. What are intrinsic and extrinsic semiconductors?
c. Write a note on PN junction.
d. What is Zener diode? Draw its symbol and explain its characteristics.
e. What is transistor? Draw and explain PNP transistor.
f. Differentiate between FET and BJT.
g. What do you mean by thermal runaway?

SECTION – C

Note: Attempt any three questions. **10x3=30**

Q3. What are needs of filter? Explain π (Pi) filter in detail.
Q4. Derive an expression for amplification factor (β) of common emitter configuration.
Q5. What is CMOS? Explain its advantages and application.
Q6. Explain the concept of bipolar transistor and draw symbol of NPN and PNP transistors.

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