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SUBJECT CODE NO:- 2112
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. F.Y Sem-I
Examination March/April-2022 (To be held in June/July-2022)
Electronics Paper-I
Network Theorems Semi Conductor Devices

[Time: 1:53 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 Draw the circuit diagram of half wave rectifier and explain its working. Derive its efficiency. 20

OR

With neat circuit diagram explain the working of p-n junction diode in forward and reverse bias.

Q.2 With a neat diagram explain the working of transistor in F-R bias. 20

OR

Write Short notes on

- i) Inductance
- ii) Fixed negative linear Voltage regulators.
- iii) Bridge Rectifiers
- iv) JFET
- v) Photodiode
- vi) Maximum power transfer theorem.

Q.3 Attempt the following multiple choice questions. 10

- (1) The knee voltage of silicon p-n junction diode is _____.
 - a) 0.3 V
 - b) 0.7 V
 - c) 7 V
 - d) 3 V
- (2) The maximum efficiency of half wave rectifier is _____.
 - a) 40.6%
 - b) 81.2%
 - c) 50%
 - d) 100%
- (3) In p-type semiconductors majority carriers are
 - a) Holes
 - b) Electrons

- c) Protons
d) Neutrons.
- (4) If two resistance $R_1 = 1 \text{ K } \Omega$ and $R_2 = 100 \text{ K } \Omega$ are connected in series then total resistance is
- a) 110 K
b) 101 K Ω
c) 100 K Ω
d) 1 K Ω
- (5) In transistor collector current is Controlled by
- a) base current
b) emitter current
c) collector voltage
d) all of the above
- (6) The resistance with colour code Red Red orange having value
- a) 22 Ω
b) 22 K Ω
c) 2.2 K Ω
d) 220 Ω
- (7) A current ratio I_c / I_B is called
- a) Beta
b) Alpha
c) Theta
d) Zeta.
- (8) A Zener diode is used as
- a) Voltage regulator
b) Filter
c) Rectifier
d) all of the above.
- (9) A reverse biased pn junction has resistance of the
- a) order of Ω
b) order of K Ω
c) order of M Ω
d) none of the above
- (10) The number of depletion layers in a transistor is
- a) Four
b) Two
c) One
d) Three