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**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**

(For Candidates admitted from 2019 - 2020 onwards)



UG DEGREE EXAMINATIONS APRIL - 2021

B.Sc., - COMPUTER SCIENCE

APPLIED PHYSICS - II

Time: 3 Hrs

Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER

(10X1=10)

1. A Semiconductor has generally ____ valance electrons.
a) 2 b) 3 c) 6 d) 4.
2. When pure semiconductor is heated its resistance will ____.
a) increase b) decrease c) remains same d) cannot say.
3. In an npn Transistor ____ are minority carriers.
a) holes b) free electrons c) donor ions d) acceptor ions.
4. if $\alpha=0.98$ then β is ____.
a) 9 b) 40 c) 49 d) 99
5. The condition for population inversion is ____.
a) $E_2 < E_1$ b) $E_2 = E_1$ c) both a,b d) $E_2 > E_1$
6. Helium Neon Laser is ____ level gas LaserK.
a) 3 b) 4 c) 1 d) 2
7. To display 8 in a seven segment __ must be switched on.
a) all segment b) only A c) only A,C d) only B,D.
8. A Photo diode is normally ____.
a) forward bias b) emit light c) reverse bias d) none
9. An Opamp can amplify ____ signals.
a) a.c b) b.c c) both a.c&d.c d) none
10. If $A_d = 3500$, $A_c = 35$ then CMRR is ____ .
a) 10 b) 1 c) 100 d) 1000

PART - B

ANSWER ALL THE QUESTIONS

(5X7=35)

11. a) Write a note on Intrinsic and Extrinsic semiconductor.

(OR)

- b) Explain the V-I characteristics of Zener diode.

12. a) Explain working of Transistor as an Amplifier.

(OR)

b) Explain the working of FET as an Amplifier.

13. a) Explain the working of Ruby Laser.

(OR)

b) What is stimulated emission? Explain the concept population inversion.

14. a) Explain the working of Photo diode.

(OR)

b) Explain the working of LCD.

15. a) Derive an expression for gain of an Inverting amplifier.

(OR)

b) Explain the working of Op amp as an Inverting adder.

PART - C

ANSWER ANY THREE QUESTIONS

(3X10=30)

16. Explain the theory of Tunnel Diode. Also explain its V-I characteristics with a neat graph.

17. With suitable graphs discuss the CE characteristics of a Transistor.

18. Explain the construction and working of Helium-Neon Laser.

19. Explain the construction and working of LED. Give its uses.

20. Explain the working of Op amp as a) Integrator b) Comparator.