22SSP104

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch – **SOFTWARE SYSTEMS (Five Year Integrated)**

APPLIED PHYSICS

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. LED stands for?
   (i) Light emitting diode (ii) Light energy diode
   (iii) Laser emitting diode (iv) Laser energy diode

2. Which is the property of Ferrites?
   (i) Low resistivity and permeability
   (ii) High resistivity and permeability
   (iii) High resistivity and low permeability
   (iv) Low resistivity and High permeability

3. What is the ratio of He and Ne gases in He-Ne laser?
   (i) 1:1 (ii) 1:10
   (iii) 10:1 (iv) 100:1

4. Ni-Ti alloys consist of?
   (i) 51% -nickel and 49%-titanium
   (ii) 9% -nickel and 91%-titanium
   (iii) 91% -nickel and 9%-titanium
   (iv) 49% -nickel and 51%-titanium

5. Find the correct Boolean expression of A.A=?
   (i) A (ii) 1
   (iii) 0 (iv) Infinity

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a) Explain the principle of Hall effect.
   OR
   b) Explain the working process of solar cell.

7. a) Write a short not on Hysteresis.
   OR
   b) Compare hard and soft magnetic materials.

8. a) Explain the principles of laser with diagram.
   OR
   b) Explain the method involved in holography.

9. a) Write a note on SMA.
   OR
   b) List out the applications of superconductors.

10. a) Explain NAND and NOR gates as Universal gate.
    OR
    b) Classify the different types of ICs.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a) What are semiconductors? Explain the classification of semiconductors in detail.

OR

b) Compare RAM, DRAM and ROM in detail.

12. a) Explain the domain theory of ferromagnetism and the property of ferromagnetic materials.

OR

b) Compare the working of optical and magnetic and magneto optical memory devices.

13. a) Explain the construction and working of Nd:YAG laser.

OR

b) Outline the fiber optical communication system with neat diagram.

14. a) Discuss the construction and working of Ball milling technique which is used to synthesis nanomaterials.

OR

b) Explain how superconductors are used in SQUID and Leviation in detail.

15. a) State and prove De Morgan's theorem.

OR

b) Explain the working of Half and Full Adder.

Z-Z-Z END