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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2020-21 ONLY)

SUB CODE **20 UPS 509**

REG.NO

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : DECEMBER – 2022

B.Sc. – PHYSICS **MAXIMUM MARKS: 70**

V SEMESTER **TIME : 3 HOURS**

PART – III

BASIC ELECTRONICS & CIRCUIT SYSTEMS

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. RMS value stands for …….

   a. root mean square b. root mean semi value
   c. real mean square d. real major symbol

2. Thevenin's theorem deals with ……

   a. electrical devices b. Electronic circuits
   c. all microprocessors d. digital devices

3. Zener diode acts as a ……..

   a. voltage regulator b. voltage clipper
   c. clampper d. multiplexer

4. Clippers are used for ……

   a. removing positive or negative cycles
   b. filter dc c. filter ac d. multiplying input

5. Oscillator circuit is used for …….

   a. producing a.c signals,square waves
   b. circles c. squares d. triangles

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. (K2)

6. What is meant by negative feed back?
7. Define "slew rate".
8. How is a differentiator circuit working?
9. Give the principle of operation of LDR
10. Where are LEDs used?

ETHICAL PAPER

(CONTD……2)

SECTION – B (5 X 4 = 20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) State and explain Norton's theorem.

(OR)

b) Brief about Kirchoff's voltage law

12. a) List the components of a power supply unit and explain.

(OR)

b) How are clamper circuits working?

13. a) Illustrate the basic principles of feed back amplifiers

(OR)

b) Explain the common emitter amplifier system

14. a) Outline the characteristics of OP AMP

(OR)

b) Give the principle of operation of differential OP AMP

15. a) Enumerate the principle of working of photovoltaic cells

(OR)

b) What is a flash control? Explain

SECTION – C (4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS
(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS
(FROM Qn. No : 17 to 21) (K4/K5)

16. Elaborate the principle of a transformer with a neat sketch and discuss its applications .

17. Give an account of various characteristics of FET

18. Distinguish between Hartley and Colpitt's oscillator circuits

19. Draw the differentiator and integrator circuits and demonstrate their working.

20. With a neat diagram, explain the principle and operation of a LED.

21. Brief about optically coupled isolator and photoresistor

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