20PHU12/18PHU12

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022
(Fourth Semester)

Branch – **PHYSICS**

ELECTRONIC INSTRUMENTATION

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 1 = 10)

1. Which of the following error is caused by poor calibration of instrument?
   (i) Random error (ii) Gross error
   (iii) Systematic error (iv) Precision error

2. Choose the atomic standard time is based on…….
   (i) Periodic vibrations produced in a atom (ii) alpha particle produced in a atom
   (iii) Nuclear force produced in the atom (iv) none of the above

3. Identify the output of a digital multimeter is…….
   (i) mechanical (ii) optical
   (iii) electrical (iv) analog

4. Find an ohmmeter connected across an open switch will display……..
   (i) 0 ohms (ii) 100 ohms (iii) 50 k ohms (iv) 0 L

5. CRO is a…….
   (i) Fast X-Y Plotter (ii) Slow X-Y Plotter
   (iii) Medium X-Y Plotter (iv) not a Plotter

6. Identify typically oscilloscope represents…….
   (i) Current and time (ii) Resistance and time
   (iii) Voltage and time (iv) Power and time

7. Label the thermistor is a transducer. Its temperature coefficients is…….
   (i) negative (ii) positive
   (iii) zero (iv) none of these

8. Find an inductive transducer measures the variation in…….
   (i) reluctance (ii) resistance
   (iii) capacitance (iv) self-inductance

9. What does the T wave respect in an ECG?
   (i) Atrial diastole (ii) Atrial systole
   (iii) Ventricular diastole (iv) Joint diastole

10. ERG used for activity of an eye is an abbreviation of……..
    (i) Eyeretinograpy (ii) Electroretinography
    (iii) Electrical radiography (iv) both (i) and (ii)

Cont…

SECTION - B (35 Marks)

Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

11 (a) Explain static characteristics.

(OR)

(b) Discuss about the atomic frequency.

12 (a) Explain the operation of Multirange Ammeter.

(OR)

(b) Write a short note on Multimeter.

13 (a) Explain the basic principle of oscilloscope.

(OR)

(b) Explain measurement of frequency by Lissajous figure.

14 (a) Bring out the thermoelectric type .

(OR)

(b) Explain metallic wire transducer.

15 (a) Outline the brain waves.

(OR)

(b) Explain different modes of operation.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16. Analyze the different types of static error.

17. Discuss the operation of AC voltmeter using half wave rectifier and full wave rectifier.

18. Elucidate the principle and construction of CRO and dual beam CRO.

19. Highlight the following:
    (i) Photo electric type resistive transducer.
    (ii) Thermistor type transducer.

20. Discuss the different lead configurations used in Electrooculography (EOG) .

Z-Z-Z END