

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch –PHYSICS

ELECTRONIC INSTRUMENTATION

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Which of the following is caused by careless handling?
(i) gross error (ii) systematic error
(iii) random error (iv) environmental error
- 2 A PMMC meter rated at 50 μ A is used in a rectifier type of instrument which uses full wave rectification. What is the sensitivity on sinusoidal a.c ?
(i) 20K Ω /V (ii) 9 K Ω /V
(iii) 18 K Ω /V (iv) 22.2 K Ω /V
3. Oscilloscope is a
(i) a ohmmeter (ii) an ammeter
(iii) a voltmeter (iv) a multimeter
- 4 Which transducer is known as self generating transducer?
(i) analog (ii) passive
(iii) secondary (iv) active
- 5 The heart sounds are recorded by
(i) Electro cardiography (ii) Endoscope
(iii) Angio cardiography (iv) Phono cardiography

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Briefly explain the static characteristics of an instrument.
OR
b Write a note on atomic frequency and time standards.
- 7 a Give the advantages of Ayrton shunt ammeter over multi range ammeters.
OR
b List the multimeter operating instructions.
- 8 a Explain the basic principle of an oscilloscope.
OR
b. Mention any three applications of oscilloscope.

Cont...

- 9 a Name the different types of piezoelectric transducer.
OR
b Explain the working principle of inductive transducer.
- 10 a Bring out the salient features of phonocardiography.
OR
b List the different modes of operation of the pacemakers.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Explain the types of static errors in measurements.
OR
b Discuss the significance of dynamic characteristics in measurement systems.
- 12 a Discuss the calibration of the ohmmeter.
OR
b Explain the working of an AC voltmeter using a full wave rectifier.
- 13 a Describe the CRT features in detail.
OR
b Discuss how Lissajous method works for frequency measurement.
- 14 a Describe the operation of a strain gauge.
OR
b Describe the construction of a Linear Variable Differential Transducer(LVDT). Give its disadvantages.
- 15 a Draw the block diagram of echocardiography and explain its functions.
OR
b Describe the recording set up used in EMG.

Z-Z-Z

END