

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
MSc DEGREE EXAMINATION DECEMBER 2023  
(Second Semester)

Branch – APPLIED ELECTRONICS  
MAJOR ELECTIVE COURSE –I WEARABLE DEVICES  
AND ITS APPLICATIONS

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. A Sensor is a \_\_\_\_\_.  
(i) Subsystem (ii) Machine (iii) Module (iv) All the above
2. The more correct a sensor can measure, the more \_\_\_\_\_ it is.  
(i) Accurate (ii) Precise (iii) Scaled (iv) Extent
3. Thermistor has the property of \_\_\_\_\_.  
(i) No resistance (ii) Zero temperature coefficient  
(iii) Negative temperature coefficient (iv) Positive temperature coefficient
4. Application of Textile sensor is \_\_\_\_\_.  
(i) Elevator touch sensitive buttons (ii) Smart mobile phones  
(iii) Car (iv) Both i and ii
5. What is the range of a very low impedance microphone?  
(i) 0 to 50  $\Omega$  (ii) 50 to 100  $\Omega$   
(iii) 1000 to 1500  $\Omega$  (iv) 100 to 600  $\Omega$

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Explain the Chemical sensors.  
OR  
b Discuss the Environment monitoring sensor.
- 7 a Write short note on Accelerometers.  
OR  
b Explain the Fall detection.
- 8 a Explain the Wearable Piezoresistive.  
OR  
b Discuss the conductive textile electrode.
- 9 a Explain the parameters of interest.  
OR  
b Discuss the Portable pulse oximeters.
- 10 a Give application in safety and security.  
OR  
b Explain the Bioacoustics.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Discuss the Types of variable sensors.  
OR  
b Explain the Industry sectors.
- 12 a Explain the Magnetic sensors.  
OR  
b Discuss the Fall risk assessment.
- 13 a Discuss the Wearable sensors for body temperature.  
OR  
b Explain the piezoresistive fabric sensors.
- 14 a Describe the Micro needle types.  
OR  
b Explain the Electrochemical.
- 15 a Discuss the MEMS Microphones.  
OR  
b Illustrate assistive devices for fingers and heads.

Z-Z-Z

END