TOTAL PAGES: 2

22ELP210AN

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2025
(Second Semester)

Branch – **APPLIED ELECTRONICS**

MAJOR ELECTIVE COURSE – I WEARABLE DEVICES AND ITS APPLICATIONS

Time: Three Hours Maximum: 75 Marks

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

Module No.	Question No.	Question	K Level	CO
1	1	Wearable computing device in the form of computerized eyeglasses are _____. (a) HMD (b) Helmets (c) Smart Glasses (d) VR Glasses	K1	CO1
	2	A Sensor is a _____. (a) Subsystem (b) Machine (c) Module (d) All the above	K2	CO1
2	3	Which equipment is used for measuring the level of physical activity done by a human being? (a) Speedometer (b) Odometer (c) Pedometer (d) Passmeter	K1	CO2
	4	A sensor that detects magnetic power is called _____ (a) Magnetic sensor (b) Electric sensor (c) Motions sensor (d) All the above	K2	CO2
3	5	Which is used for temperature measurement? (a) Venturimeter (b) Manometer (c) Rotameter (d) Thermocouple	K1	CO3
	6	Infrared detectors are also called _____. (a) Active IR sensors (b) Passive IR sensors (c) Both a and b (d) None of the above	K2	CO3
4	7	Which of the following are the applications of MOS sensors? (a) Image sensor (b) Biochemical sensor (c) Monitoring sensor (d) All the above	K1	CO4
	8	Electrolytic fluid-filled tilt sensors are filled with _____. (a) Fluid (b)Gas (c) Liquid (d) Both a and b	K2	CO4
5	9	Which of the following are the application of motion sensors? (a) Surveillance cameras (b)Home appliances (c) Auto lighting systems (d) All the above	K1	CO5
	10	Which of the following are the applications of MEMS tilt sensor? (a) Smartphones (b) Medical test (c) Satellites (d) All the above	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain briefly about the emergence of wearable computing and wearable electronics.	K5	CO1
		(OR)		
	11.b.	Give any four application of wearable devices with suitable example.		
2	12.a.	Explain about pedometers and actigraphs in energy expenditure measurement.	K5	CO2
		(OR)		
	12.b.	Explain about the working principle of accelerometers.		
3	13.a.	Explain about the photo resistive sensors for cuff less blood pressure measurement.	K6	CO3
		(OR)		
	13.b.	Describe the detection principle of conductive textile electrodes and knitted piezo resistive fabric (KPF) sensors.		
4	14.a.	Discuss the working principle of pulse oximeters.	K4	CO4
		(OR)		
	14.b.	Describe the working of micro needle based wearable biochemical sensors.		
5	15.a.	Explain the need of cameras in wearable devices and its application in the field of safety, security and navigation.	K4	CO5
		(OR)		
	15.b.	Discuss the significance of microphones and AI in field of biomedicine.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions
ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain about types of wearable sensors with its suitable example.	K5	CO1
2	17	Discuss the working of Wearable inertial sensors in monitoring human physical activity.	K5	CO2
3	18	Explain about the Wearable sensors for body temperature.	K6	CO3
4	19	Describe about the wearable gas sensors and its classification in detail.	K4	CO4
5	20	Explain the use of wearable microphones with any 3 application.	K4	CO5

Z-Z-Z END