23ELU414N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Fourth Semester)

Branch - **ELECTRONICS**

POWER ELECTRONICS

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	A silicon controlled rectifier is turned on if the anode current is greater than a) Trigger current b) Anode current c) Cathode current d) Holding current	K1	CO1
	2	A freewheeling diode is phase-controlled rectifiers. a) Stops rectifier operations b) Improves line power factor c) Is the reason for additional harmonics d) Is the reason for the sudden breakdown	K2	CO1
2	3	Which type of electrode is designed for melting quickly? a) Fast fill b) Fast freeze c) Quick fill d) Fill freeze	K1	CO2
	4	Which material is not used as an iron coating on the electrode used in arc welding? a) Cellulose b) Iron powder c) Calcium fluoride d) Steel	K2	CO2
3	5	Which of the following can be measured using Piezo-electric transducer? a) Velocity b) Displacement c) Force d) Sound	K1	CO3
	6	Which of the following is used in photo conductive cell? a) Selenium b) Quartz c) Rochelle salt d) Lithium sulphate	K2	CO3
4	7	Units for Humidity sensor_____ a) Dew/fost point or Relative Humidity b) Relative Humidity or Parts Per Million c) Dew/fost point or Parts Per Million d) Dew/fost point or Parts Per Million or Relative Humidity	K1	CO4
	8	Which one of the following temperature sensors, the resolution is low? a) Thermocouple b) Thermistor c) Resistance temperature sensor d) Both a and b	K2	CO4
5	9	Which among the below stated soldering methods is also renowned as 'High Frequency Resistance Soldering'? a) Iron Soldering b) Furnace Soldering c) Torch Soldering d) Electrical Soldering	K1	CO4
	10	The actual cost of PCB can be evaluated on the basis of _____ a)PCB size & material b) Number of layers c)Vias on PCB d)All of the above	K2	CO4

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 the single phase inverter with diagram.	K2	CO1
		(OR)		
	11.b.	Give the outline of time delay circuits.		
2	12.a.	Explain the types of resistance welding in detail.	K3	CO2
		(OR)		
	12.b.	Identify the concepts of dielectric heating and its applications.		
3	13.a.	Construct and explain the strain gauge method of displacement measurement.	K3	CO3
		(OR)		
	13.b.	Build and explain about principles of turbine flow meter.		
4	14.a.	Write the functions of Strip tension controller.	K4	CO4
		(OR)		
	14.b.	Conclude the warehouse humidity controller with diagrams.		
5	15.a.	List out the PCB types and its merits.	K4	CO4
		(OR)		
	15.b.	Classify the soldering techniques in detail.		

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	Examine the function of SCR current limiting circuit breaker.	K4	CO1
2	17	Conclude the concepts of resistance welding with its applications.	K4	CO2
3	18	Justify the resistive and ultrasonic method of level measurements.	K5	CO3
4	19	Explain the control of relative humidity in a textile moisture process.	K4	CO4
5	20	Determine the PCB layout preparation method in detail.	K5	CO4

Z-Z-Z END