MCQs ON POWER ELECTRONICS

1. Which of the following statements is correct?
   A. Sensors and transducers are both examples of actuators
   B. Actuators and transducers are both examples of sensors
   C. Sensors and actuators are both examples of transducers.
   D. None of the above

2. What term describes the maximum expected error associated with a measurement or a sensor?
   A. Range  B. Accuracy  C. Resolution  D. Precision

3. Which of the following forms of temperature sensor produces a large change in its resistance with temperature, but is very non-linear?
   A. A pn junction sensor  B. A thermistor
   C. A platinum resistance thermometer  D. All the above

4. One of the most widely used forms of light sensor is the
   A. A photodiode is an example of a photovoltaic sensor
   B. A photodiode can be used as either a photoconductive or a photovoltaic sensor
   C. A photodiode is an example of a photoconductive sensor
   D. None of the above

5. Temperature sensing can be achieved by use of
   A. thermocouples  B. RTDs  C. Thermistors  D. all of the above

6. The output voltage of a typical thermocouple is
   A. less than 100 millivolts  B. greater than 1 volt
   C. thermocouples vary resistance, not voltage  D. none of the above

7. RTDs are typically connected with other fixed resistors
   A. in a pi configuration  B. in a bridge configuration
   C. and variable resistors  D. and capacitors in a filter-type circuit

8. What device is similar to an RTD but has a negative temperature coefficient?
   A. strain gage  B. negative-type RTD  C. Thermistor  D. Thermocouple

9. Motion-measuring circuits make use of
   A. inductance  B. Capacitance  C. Light  D. all of the above

10. Proximity detection can be performed by
    A. inductive detectors  B. capacitive detectors
    C. fiber-optic detectors  D. both b and c

11. The silicon-controlled rectifier can be turned off
    A. by a negative gate pulse  B. by forced commutation
    C. with the off switch  D. when the breakover voltage is exceeded

12. Holding current for an SCR is best described as
    A. the minimum current required for turn-off
    B. the current required before an SCR will turn-on

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13. A triac placed in reverse bias will conduct
A. since it is a bidirectional device  B. if the breakdown voltage is exceeded
C. only if triggered by a pulse at the gate  D. both a and c

14. Precise phase control for an ac load can be controlled by a(n)
A. SCR  B. Triac  C. Transformer  D. trigger pulse

15. What is the zero-voltage switch used for?
A. to control low-voltage circuits  B. to reduce radiation of high frequencies during turn-on of a high current to a load
C. to provide power to a circuit when power is lost  D. for extremely low-voltage applications

16. Which of the following is a desirable characteristic of an instrument ?
A. High fidelity  B. Poor reproducibility  C. High drift  D. High measuring lag

17. Which of the following is the dynamic characteristics of an instrument ?
A. Dead zone  B. Reproducibility  C. Fidelity  D. Sensitivity

18. Response of a system to a sinusoidal input is called __________ response
A. frequency  B. Impulse  C. unit step  D. none of these

19. Which of the following relates the emf. generated in a single homogeneous wire to the temperature difference ?
A. Peltier effect  B. Thomson effect  C. Seebeck effect  D. none of these

20. Thermistor, which has high temperature co-efficient of resistivity, is used as the sensing element in resistance thermometer. It is a/an
A. conductor  B. liquid semi-conductor  C. solid semi-conductor  D. Insulator

21. Which of the following is an undesirable dynamic characteristic of an instrument ?
A. Static error  B. Dead zone  C. Time lag  D. Reproducibility