

2025 II 24

0930

Seat No.

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Time : 2 Hours

**INDUSTRIAL ELECTRONICS
AND INSTRUMENTATION**

Subject Code

V	4	3	3	4
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Total No. of Questions : 23 (Printed Pages : 4)

Maximum Marks : 50

- INSTRUCTIONS :**
- (i) There are four sections in the question paper (A, B, C and D) consisting of **23** questions.
 - (ii) In section A, there are eight questions of which Q. Nos. 1 to 4 are multiple choice questions, Q. Nos. 5 and 6 are to be answered in one/two words, phrase or figure and Q. Nos. 7 and 8 are to be answered in one sentence each.
 - (iii) All questions are compulsory, however there is internal choice for Q. Nos. 20 and 23.
 - (iv) Figures to the right indicate marks allotted to each question.
 - (v) Write the number of each question clearly on the answer-book.

SECTION-‘A’

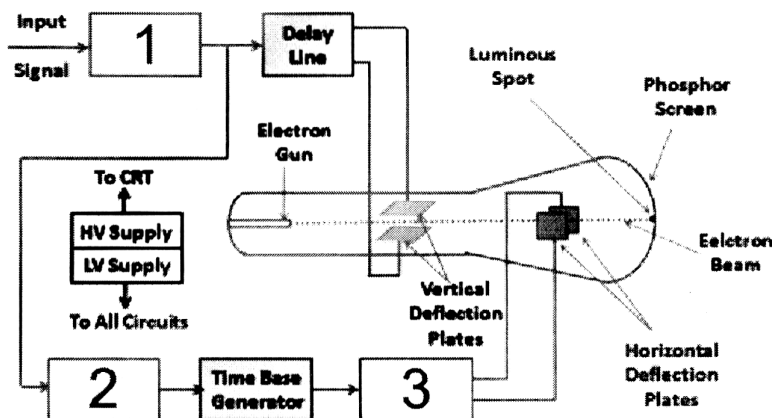
1. A photo diode is also known as 1
 - Photo detector
 - Light dependent resistor
 - Photo tube
 - Photo relay
2. The maximum input voltage that can be connected to IC 7824 is 1
 - +24 V
 - + 35 V
 - + 40 V
 - + 50 V
3. The output waveform of an astable multivibrator using IC555 is 1
 - square wave
 - rectangular wave
 - sine wave
 - saw tooth wave
4. An electronic instrument used to detect metal in hidden places 1
 - tong tester
 - metal detector
 - anemometer
 - LVDT
5. Name the IC that can be used as an adjustable positive output voltage regulator. 1
6. State *one* application of a radio frequency signal generator. 1
7. State any *two* applications of SCR. 1
8. Define instrumentation system. 1

SECTION-'B'

9. With the help of a labelled diagram explain how to convert D' Arsonval meter into an ammeter. 2
10. State any *four* features of IC555. 2
11. State *two* points of difference between SCR and TRIAC. 2
12. Draw a labelled diagram of a series dc motor and state any *one* application of the same. 2
13. State the functions of cathode and heater in the electron gun assembly of a cathode ray tube. 2
14. Explain the working principle of a permanent magnetic moving coil meter. 2

SECTION-'C'

15. Briefly explain the working of a linear variable differential transducer (LVDT). 3
16. Define photo resistive effect. Draw a labelled diagram of a LDR and also state any *one* application of it. 3
17. The following is a block diagram of a CRO. Write down the names of the missing blocks. 3



18. With the help of a block diagram explain the working of an AF signal generator. 3
19. State any *three* differences between an online UPS and an offline UPS ? 3
20. With the help of a labelled diagram explain the working of a bonded strain gauge. 3

Or

With the help of a labelled diagram explain the working of an unbonded strain gauge. 3

SECTION-D'

21. With the help of a block diagram explain the working of an electrocardiogram. 4
22. Explain the functions of the following parts of a DC motor : 4
- (a) yoke
 - (b) armature winding
 - (c) carbon brushes
 - (d) bearings.
23. Draw the pin configuration diagram of IC555 and state the function of the following pins : 4
- (a) Pin 1
 - (b) Pin 3
 - (c) Pin 8.

Or

With the help of a neat circuit diagram explain the working of an astable multivibrator using IC555 and also state the formula for time period. 4