



B.Sc. VI Semester Degree Examination, Sept./Oct. - 2024

PHYSICS

8 : Electronic Instrumentation and Sensors

(NEP)

Time : 2 Hours

Maximum Marks : 60

Note : Answer **all** the Sections.

SECTION - A

Answer the following sub-questions, each sub-question carry **one** mark. **10x1=10**

1. (a) Define Rectification.
- (b) Define Ripple Factor.
- (c) Write the expression for cut-off frequency for Low Pass Filter.
- (d) What is the function of a Capacitive Filter ?
- (e) What is the function of op-amp in Active Filter ?
- (f) Write any one application of standard signal generator.
- (g) What is Digital Display System ?
- (h) Write any one application of Photo diode.
- (i) What is Piezo-electric Transducer ?
- (j) What is Fixed Frequency ?

SECTION - B

Answer **any four** of the following questions, each question carries **five** marks.

2. What is AC Power ? Mention its characteristics. **4x5=20**
3. What are Active and Passive Filters ? Explain.
4. Explain Digital to Analog and Analog to Digital Converters.
5. Explain the working of R-2R Ladder type D/A Converter.
6. What is transducer ? Discuss its types.
7. Explain the principle and construction of Linear Variable Differential Transducer.



SECTION - C

Answer **any three** of the following questions, each question carries **ten** marks.

3x10=30

8. With a neat block diagram explain the construction and working of Cathode Ray Oscilloscope. **10**
9. (a) With a neat block diagram explain AF sine and square wave generator using wein bridge network and oscillators. **7**
- (b) Determine the low cut-off frequency f_L of a High Pass filter $R=47\text{ k Ohm}$ and $C=0.0022\ \mu\text{F}$. **3**
10. (a) Explain the construction and working of LCD. **7**
- (b) Write any three applications of LCD. **3**
11. (a) Explain the principle and working of Photo diode. **7**
- (b) What is Thermister ? Mention its types. **3**
12. (a) What is the need for DC Power Supply ? Mention its characteristics. **5**
- (b) Explain triangular wave generator with wave form. **5**

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