

U.G. 5th Semester Examination - 2021**PHYSICS****Course Code : BPHSSERT504****Course Title : Basic Instrumentation Skills**

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate marks.

Answer all the questions by choosing correct alternative:

 $2 \times 25 = 50$

1. Which of the following is caused by careless handling?
 - a) Systematic error
 - b) Gross error
 - c) Random error
 - d) None of the mentioned
2. To increase the current sensitivity below 10mV, electronic instrument uses
 - a) Amplifiers
 - b) Modulator
 - c) Transducer
 - d) Oscillator

3. A voltmeter is connected in a _____ with the circuit component across which potential difference is to be measured.
 - a) Parallel
 - b) Series
 - c) Series or parallel
 - d) None of the above
4. CRO stands for
 - a) Cathode Ray Oscilloscope
 - b) Current Resistance Oscillator
 - c) Central Resistance Oscillator
 - d) Capacitance Resistance Oscilloscope
5. The full range of audibility in audio frequency oscillator is
 - a) 0 to 20Hz
 - b) 20Hz to 2kHz
 - c) 20Hz to 20kHz
 - d) 20Hz to 20MHz
6. AC voltmeter consists of _____.
 - a) half wave rectifier
 - b) full wave rectifier
 - c) center tap rectifier
 - d) bridge wave rectifier

7. The resistance of an ideal voltmeter is _____
- low
 - infinite
 - zero
 - high
8. In a digital multimeter current is converted to voltage _____.
- through a voltmeter
 - through a resistance
 - through an ammeter
 - through a galvanometer
9. Quantities are digitized in a DMM using _____
- D/A converter
 - Oscillator
 - Amplifier
 - A/D converter
10. Resistance is measured using _____.
- constant current source
 - constant voltage source
 - variable current source
 - variable voltage source
11. Input impedance of an electronic voltmeter is
- Low
 - High
 - Medium
 - Zero
12. A bridge is balanced by –
- Galvanometer
 - Oscillator
 - Zero adjustment resistor
 - Headphone
13. Low voltage signals can be measured by–
- Amplifiers
 - Transformers
 - Transducers
 - Voltmeters
14. If the length of a pendulum is increased by 3% then the temperature of the pendulum will (approximately)
- increase by 0.6%
 - increase by 0.5%
 - increase by 1.5%
 - decrease by 0.15%

15. Resolution of an instrument is—
- ability to distinguish polarity
 - the maximum non linearity
 - the minimum quantity it can measure
 - the maximum quantity it can measure
16. A digital voltmeter has a read out range from 0 to 9999 counts. If the full scale reading is 9.999V the resolution is —
- 1V
 - 0.01V
 - 1 milli V
 - 1 micro V
17. The cathode of a C.R.O is usually coated with—
- Alkali Metals
 - Tungsten
 - Copper oxide
 - Barium or Strontium oxide
18. A C.R.O can be used to measure
- a. c. voltage only
 - d.c. voltage only
 - Frequency
 - Any of the above
19. Which of the following is an advantage of the analog multimeter over the digital multimeter?
- no loading effect
 - high accuracy
 - smaller size
 - less electric noise
20. An unknown DC voltage is to be measured by a multimeter. Which range will you select first?
- 500V
 - 50V
 - 5V
 - 0.5V
21. Basic circuit of a multimeter consists of
- a.c amplifier
 - d.c amplifier
 - operational amplifier
 - power amplifier
22. If the resistance in parallel with a parallel resonant circuit is reduced, the bandwidth
- disappears
 - becomes sharper
 - increases
 - decreases

23. To tune a parallel resonant circuit to a higher frequency, the capacitance should be
- a) increases
 - b) decreases
 - c) left alone
 - d) replacement with inductance
24. A series RLC circuit that is operating above the resonant frequency, the current
- a) lags the applied voltage
 - b) leads the applied voltage
 - c) is in phase with the applied voltage
 - d) zero
25. A. C. voltages are measured using
- a) oscillators and Op-Amps
 - b) rectifiers and filters
 - c) resistor and capacitor
 - d) inductor and resistor
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