

University of Mumbai

Examination 2020

Program: ETRX Engineering

Curriculum Scheme: Rev2016

Examination: Second Year Semester III

Course Code: ELX 305 and Course Name: EIM

Time: 1 hour

Max. Marks: 50

For the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | Function of transducer is to convert |
| Option A: | Electrical signal into non electrical quantity |
| Option B: | Non electrical quantity into electrical signal |
| Option C: | Electrical signal into mechanical quantity |
| Option D: | All of these |
| Q2. | Thermistor is a transducer. Its temperature coefficient is |
| Option A: | Negative |
| Option B: | Positive |
| Option C: | Zero |
| Option D: | None of these |
| Q3. | Potentiometer transducers are used for the measurement of |
| Option A: | Pressure |
| Option B: | Displacement |
| Option C: | Humidity |
| Option D: | Both (a) and (b) |
| Q4. | Strain gauge is a |
| Option A: | Active device and converts mechanical displacement into a change of resistance |
| Option B: | Passive device and converts electrical displacement into a change of resistance |
| Option C: | Passive device and converts mechanical displacement into a change of resistance |
| Option D: | Active device and converts electrical displacement into a change of resistance |
| Q5. | Constantan is used for measurement of dynamic strains. It is an alloy of |
| Option A: | Copper and Aluminium |
| Option B: | Nickel and molybdenum |
| Option C: | Nickel and chromium |
| Option D: | Copper and nickel |
| Q6. | The linear variable differential transformer transducer is |
| Option A: | Inductive transducer |
| Option B: | Non-inductive transducer |
| Option C: | Capacitive transducer |
| Option D: | Resistive transducer |
| Q7. | The transducer used for the measurements is/are |
| Option A: | Resistance temperature detectors |
| Option B: | Thermistors |

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| Option C: | Ultrasonic |
| Option D: | All of these |
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| Q8. | If at one end, the two wires made of different metals are joined together then a voltage will get produced between the two wires due to difference of temp between the two ends of wires. This effect is observed in |
| Option A: | Thermocouples |
| Option B: | Thermistors |
| Option C: | RTD |
| Option D: | Ultrasonics |
| | |
| Q9. | For the measurement of pressure the instruments used can be |
| Option A: | Mechanical |
| Option B: | Electro-mechanical |
| Option C: | Electronic |
| Option D: | All of these |
| | |
| Q10. | With the increase in the intensity of light, the resistance of a photovoltaic cell |
| Option A: | Increases |
| Option B: | Decreases |
| Option C: | Remains same |
| Option D: | None of these |
| | |
| Q11. | The instruments used for the measurement of pressure is/are |
| Option A: | Bellows |
| Option B: | Diaphragms |
| Option C: | Fiber optic pressure sensors |
| Option D: | All of these |
| | |
| Q12. | Advantage of passive instrument is |
| Option A: | It does not need power supply |
| Option B: | Cheap |
| Option C: | Sensitive |
| Option D: | Accurate |
| | |
| Q13. | Bridge circuits are used for the measurement of |
| Option A: | Resistance |
| Option B: | Inductance |
| Option C: | Capacitance |
| Option D: | All of these |
| | |
| Q14. | Low resistance is the resistance of the order of |
| Option A: | 1 ohm and less than 1 ohm |
| Option B: | 1 ohm to 1 mega ohm |
| Option C: | More than one ohm |
| Option D: | None of these |
| | |
| Q15. | In Wheatstone bridge method, the instrument used as null detector is |

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| Option A: | Ammeter |
| Option B: | Voltmeter |
| Option C: | Galvanometer |
| Option D: | |
| | |
| Q16. | In a Wheatstone bridge method, the bridge is said to be balanced, when the current through the galvanometer is |
| Option A: | 1 A |
| Option B: | 0 A |
| Option C: | Maximum |
| Option D: | Half of the maximum value |
| | |
| Q17. | The sensitivity of Wheatstone bridge is defined as ratio of |
| Option A: | Deflection of the galvanometer to the unit fractional change in the value of unknown resistance |
| Option B: | Square of the deflection of the galvanometer to the unit fractional change in the value of unknown resistance |
| Option C: | Deflection of the galvanometer to the twice of the unit fractional change in the value of unknown resistance |
| Option D: | Unit fractional change in the value of unknown resistance to the deflection of the galvanometer |
| | |
| Q18. | For the measurement of low resistances, Kelvin's double bridge has high accuracy because |
| Option A: | It has two set of ratio arms which eliminates effect of resistance of connecting lead |
| Option B: | It has a null indicating galvanometer |
| Option C: | It has two null indicator |
| Option D: | It has four sets of ratio arms which eliminates the effect of resistance of connecting lead |
| | |
| Q19. | For the measurement of low resistances from few ohms down to one micro ohm, which of the following instrument is not suitable? |
| Option A: | Potentiometer method |
| Option B: | Ammeter –voltmeter method |
| Option C: | Ohmmeter |
| Option D: | Kelvin double bridge method |
| | |
| Q20. | Maxwell inductance bridge is used for coils of Q value |
| Option A: | less than 1 |
| Option B: | less than 10 |
| Option C: | greater than 1 and less than 10 |
| Option D: | more than 100 |
| | |
| Q21. | An instrumentation system does not include |
| Option A: | Transducer |
| Option B: | Instrumentation amplifier |

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| Option C: | Automatic process controller |
| Option D: | Tester |
| | |
| Q22. | Transmission line are used for |
| Option A: | Output signal |
| Option B: | Input signal |
| Option C: | Signal transfer |
| Option D: | All of the mentioned |
| | |
| Q23. | Why output of transducer is not directly connected to indicator or display? |
| Option A: | Low level output is produced |
| Option B: | High level output is produced |
| Option C: | No output is produced |
| Option D: | Input is fed directly |
| | |
| Q24. | What are the features of instrumentation amplifier? |
| Option A: | Low noise |
| Option B: | High gain accuracy |
| Option C: | Low thermal and time drift |
| Option D: | All of the mentioned |
| | |
| Q25. | What instrument is used to amplify output signal of transducer |
| Option A: | Peaking amplifier |
| Option B: | Instrumentation amplifier |
| Option C: | Differential amplifier |
| Option D: | Bridge amplifier |