Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Apr/May – 2018**

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| **Code :** | **14EI2011** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ELECTRONIC INSTRUMENTATION** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
|  | **PART-A(20X1=20 MARKS)** | | |
| 1. | An ohmmeter is an electrical instrument that measures electrical resistance, the opposition to an ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |
| 2. | An ideal voltmeter has \_\_\_\_\_\_\_\_\_\_\_ input impedance. | CO1 | 1 |
| 3. | \_\_\_\_\_\_\_\_\_\_\_ gives the accurate reading because of high input resistance. | CO1 | 1 |
| 4. | A Q meter is a piece of equipment used in the testing of \_\_\_\_\_\_\_\_\_\_\_ frequency circuits. | CO2 | 1 |
| 5. | Classify digital voltmeter. | CO2 | 1 |
| 6. | A digital multimeter displays the quantity measured as a number, which eliminates \_\_\_\_\_\_\_\_\_\_\_ errors. | CO2 | 1 |
| 7. | State the working principle of digital frequency meter. | CO2 | 1 |
| 8. | A counter circuit is usually constructed of a number of \_\_\_\_\_\_\_\_\_\_\_ connected in cascade. | CO2 | 1 |
| 9. | Define transducer. | CO2 | 1 |
| 10. | A disadvantage of digital oscilloscopes is the limited refresh rate of the screen – True/False | CO2 | 1 |
| 11. | \_\_\_\_\_\_\_\_\_\_\_ oscilloscope is used to examine a very fast signal. | CO2 | 1 |
| 12. | Digital signage is used in restaurants through an interactive menu screen that rotates promotional offers – True/False | CO2 | 1 |
| 13. | A \_\_\_\_\_\_\_\_\_\_\_ is an electronic device that generates repeating or non-repeating electronic signals in either the analog or the digital domain. | CO3 | 1 |
| 14. | A function generator is used to generate different types of electrical waveforms over a wide range of frequencies – True/False | CO3 | 1 |
| 15. | A \_\_\_\_\_\_\_\_\_\_\_ is either an electronic circuit or a piece of electronic test equipment used to generate rectangular pulses. | CO3 | 1 |
| 16. | Sweep generators are commonly used to test the \_\_\_\_\_\_\_\_\_\_\_ response of electronic filter circuits. | CO3 | 1 |
| 17. | Virtual instrumentation is the use of customizable software and modular measurement hardware to create user-defined measurement systems – True/False | CO3 | 1 |
| 18. | List any two advantages of virtual instrumentation. | CO3 | 1 |
| 19. | Identify the functional integration of virtual instrumentation. | CO3 | 1 |
| 20. | Point out the virtual instrumentation simulation software. | CO3 | 1 |

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|  | **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** | | |
| 21. | Compare the serial and shunt Ohm-Meter. | CO1 | 5 |
| 22. | Outline the impedance measurement procedure. | CO1 | 5 |
| 23. | Illustrate the operation of op-amp half-wave rectifier voltmeter. | CO1 | 5 |
| 24. | Point out the applications of frequency meter. | CO1 | 5 |
| 25. | Differentiate between digital and analog multimeters. | CO2 | 5 |
| 26. | Classify oscilloscope. | CO2 | 5 |
| 27. | Indicate the delayed sweep in CRO. | CO2 | 5 |
| 28. | Identify the need of digital display systems. | CO2 | 5 |
| 29. | List any four digital oscilloscopes applications. | CO3 | 5 |
| 30. | Outline the programming requirements of virtual instrumentation. | CO3 | 5 |
| 31. | Compare the virtual instruments and traditional instruments. | CO3 | 5 |
| 32. | Summarise the evaluation and procedures in simulation software. | CO3 | 5 |

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|  | **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** | | | |
| 33. |  | With neat sktech, explain the working of ramp generator type and dual slope integrator digital voltmeter. | CO2 | 15 |
| 34. | a. | Illustrate the construction and working of a digital storage type oscilloscope. | CO3 | 10 |
| b. | Explain the operation of low frequency signal generators. | CO3 | 5 |
| 35. | a. | Outline the evaluation of virtual instrumentation. | CO3 | 5 |
| b. | Draw a block diagram showing the various functional elements of virtual instrument and explain each of them. | CO3 | 10 |