EPPH1015 – ELECTRONIC INSTRUMENTATION

Subject Incharge : Dr. V. Sathana

2 marks

Unit – I

1. What are the functions ofa transducer?
2. Name any 4 electrical phenomena employed inthe transduction elements oftransducers.
3. Defineactivetransducer.
4. Definegaugefactor.
5. Differentiateactive and passivetransducers.
6. Defineagaugewith examples.
7. What is displacement?
8. What isstrain?
9. Give the classification of tranducers.
10. What are electrical strain guages?

Unit -II

11. What is a pH scale?
12. What are theadvantagesofthe digitalinstrumentsover theanalog instruments?
13. What is theuseofdigitalfrequencycounter?
14. What is called buffersolution?
15. Whatyou mean bypHvalue?
16. Whatarephosphors?Givetheirtypes?
17. What is the principle of ICP-AES?
18. What is chromatography?
19. Give the block diagram of digital frequency counter.
20. What is the usage of digital multimeter?

Unit-III

21. What is the principle used in UV – VIS spectrometer.
22. What is the usage of flame emission spectrometer?
23. Name the three commonpractical infrared sources.

24. List anytwo advantagesofFlame emission study.
25. DefineLambert's law.
26. What arethe componentsand sourcesareused inIRspectrometer?
27. Givethe frequencyrangeofIR waves.
28. Listthe uses ofgas chromotography.
29. What istheprincipledigital multimeter?
30. What is oscilloscope?

Unit-IV

31. Give the block diagram of ECG.
32. What is known as body temperature?
33. What is meant by ActionPotential?
34. What is systolic and diastolic pressure?
35. What is meant byresting potential?
36. DefineEEG.
37. Thenormal temperatureand blood pressureofhuman is?
38. DefineECG.
39. Definebio-potential.
40. What is bio-potential?

Unit-V

41. What is the function of mouse in computer?
42. What is known as floppy disk?
43. What is theother name ofpen drive? What are its advantages?
44. What is meant by mass data storage?Mentionanytwo types.
45. Givethebasic concept ofkeyboard.
46. Explain inkjet printing.
47. (1TB) Terabyte =_bytes.
48. What is Dot matrix?
49. DefineLaser Printer.

5 Marks

Unit-I

50. Explain the principle of LVDT.
51. Write an account on working of thermistor.
52. What is a strain gauge? Explain thebonded and unbounded strain gauges.
53. List threetypes oftemperature transducers and describethe applicationsofeach.
54. Explain the workingof linear variable differential transducer(LVDT).
55. Write anote on capacitive transducer.
56. Describethemeasurement ofpressureusingbellows.
57. Writethe advantages anddisadvantages ofLVDT.
58. Explain in detailthe electrical straingauges andcapacitive transducers
59. Write short notes on temperature and pressure.

Unit-II

60. Discuss the working of digital multimeter.
61. How the digital conductivity meter isused to measure the conductivity.
62. Explain with the help ofa neat diagramthe working ofa DigitalFrequencyMeter.
63. Explain theoperation ofa digital pH meter.
64. Explain the workingofP^Hmeter.
65. Explain theoperation ofabasicdigital multimeter.
66. Listthe applications of adigital multimeter.
67. Explain in detail thedigital conductivitymeter.
68. Describetheinstrumentation ofdigital storageoscilloscope.

Unit-III

69. Explain the basic concept of gas and liquid chromatography.
70. Explain any two application of UV – VIS spectrometer.
71. Classify thevarioustypes ofliquid chromatography. Account themvery briefly.
72. Classify thevarioustypes ofgas chromatography. Discuss the basic parts ofit with a block diagram.
73. Explain theprinciple and list thebasicparts ofgas chromatographwith suitableblock diagram.
74. Describeabout photo multipliertube.
75. Explain in detailthe basic concept of liquid chromatography.
76. Discuss theinstrumentation and workingof flameemissionspectrometer.
77. Discuss thetypeofdetectors used inIR spectrometer.

78. Explain the principle of flameemission spectroscopy.

Unit-IV

79. Write shortnote on physiologicaltranducers.
80. Explain, what is known as resting potential and action potential.
81. With the help ofa block, describe how bio – potentials are generated andmeasured?
82. Explain with the blockdiagram, how body temperature is measured?
83. Describethestraingaugepressuretransducerto measureblood pressure.
84. Explain strain gaugetypetransducer.
85. Brief howblood pressureis measured.
86. Differentiate restingandaction potentials.
87. What is blood pressure?Explain the physiologicaltransducers to measureblood pressure.
88. Write ashort notes on restingpotential and action potential.

Unit-V

89. Discuss about the laser printer.
90. Explain the printer mechanism.
91. Explain the functions ofa key Board.
92. Explain theworking details ofFloppy Disk drive.
93. Explain the workingmechanism ofmouse.
94. Describetheoperation ofCD.
95. What arethedifferent types input devices ina computer.
96. What is a compact disk (CD)?Explainittypes.
97. Explain the basic concepts of keyboard.
98. What is mass data storage?Explain indetail.

10 marks

Unit-I

99. How the tranducersareclassified.
    Write downthe principle, working ofcapacitivetranducer with neat sketch.
100. Explain with the necessary sketch the functionsof

    a) Pressurecelland b) capacitive pressure transducer

101. Explain in detailthe principle and workingof thermistor with a neat sketch

102. Describethe workingprinciple and construction ofthermistor.

103. Discuss in detail principle, construction and workingofathermistor. .

Unit-II

104. With the necessary blockdiagram, explainthe function ofa DigitalConductivity Meter.

105. What is the principle used in the digital frequency counter. Explain the working of digital frequency counter with necessary block diagram.

106. With thenecessaryblockdiagram explain the function ofdigital storageoscilloscope(DSO).

107. With aneat diagramexplain thevarious measurements madewith the digital frequencycounter.

108. Discuss the constructionand workingof digital frequencycounter with necessarydiagram.

Unit-III

109. Describeindetail the working principle ofa UV – VIS spectrometer with a blockdiagram.

110. Explain in detail thebasic components ofIRspectrometer.

111. Explain the functioningofICP-AESspectrometer with necessary diagram.

112. In detail discuss theprinciple, construction and workingof aUV-VISspectrometer.

113. Explain instrumentationand workingofIR spectrometer.

Unit-IV

114. What are thespecifications ofan EEG amplifier? Describethe recording systemoftheEEG signaland itscharacteristics.

115. Give an account on theoperation ofECG and EEG with necessary block diagrams.How is it used to monitorthe functioning ofheart ofhuman beings

116. Explain with necessaryblock diagram and theworkingfunction of

117. ECG.

118. With aschematic diagram explain how an ECG is recorded.

119. Describetheoperation ofECG and EEG.

120. With aschematic diagram explain how an ECG is recorded. What arethe sources of bio-electric potentials?

Unit-V

121. What is a Printer?Classify the different types ofPrinters. Explain the mechanismofany one ofthe printers with aneat sketch.

122. Explain themechanism of

123. i)Laserprinter ii) Dot matrixprinter

124. Give an account on Floppydisk and Hard disk.

125. What arethe sources of bio-electric potentials?

126. Explain the workingofalaser printer. Write notes on i) hard disk and ii) Thumb drive.

127. What are the different mass storage devices available in computer. Discuss any two.