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AG—281—2018

FACULTY OF SCIENCE

M.Sc. (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2018

(CBCS Pattern)

PHYSICS

Paper PH-25B

(Electronic Instrumentation)

(Tuesday, 4-12-2018)   Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours   Maximum Marks—75

N.B. :— (i)   All questions are compulsory.

   (ii)   Figures to the right indicate full marks.

1. (a)   Explain in detail generalized measurement system.   7

   (b)   Describe important characteristics of instruments.   8

Or

   (c)   Define error. Explain types of errors in instruments.   7

   (d)   Explain in detail different types of measurements.   8

2. (a)   Draw and explain resistive and inductive transducers.   7

   (b)   With well labelled diagrams, explain temperature transducers.   8

Or

   (c)   Draw and explain pressure and displacement transducers.   7

   (d)   Draw and explain in detail optical transducers.   8

3. (a)   With the help of well labelled diagrams describe auto-zeroing and auto-ranging.   7

   (b)   Explain in detail automatic polarity indication in electrical conductivity.   8

P.T.O.

(c) Draw block diagram of storage oscilloscope and describe working of digital storage oscilloscope. 7

Or

(d) Explain, what is pH ? What is automation ? Explain the need of automation. 8

4. (a) What is PC instrumentation ? Explain, how PC is used in instrumentation ? 7

(b) Explain application of PC for temperature measurement and control. 8

Or

(c) With a suitable example, explain displacement measurement using PC. 7

(d) Give two examples of use of PC in instrumentation and explain. 8

5. (a) Draw block diagram of DFM. Explain function of each block. 7

(b) Describe working of lock in amplifier using its labelled diagram. 8

Or

(c) Describe in detail the use of LVDT for thickness measurement. 7

(d) Draw and explain X-Y recorder and strip chart recorder. 8