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AY—281—2018

FACULTY OF SCIENCE

M.Sc. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2018

PHYSICS

(PH-25B)

(Electronic Instrumentation)

(Wednesday, 18-4-2018) **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*) Define instrumentation. Describe in detail the purpose of instrumentation. 7

(*b*) Explain the concept of measurement. What are the types of measurements ? Describe each of them. 8

Or

(*c*) Explain in detail the importance of measurements. 7

(*d*) Give classification of instruments. Explain each of them. 8

2. (*a*) Define a transducer ? Give classification of transducers and explain each of them. 7

(*b*) Describe resistance and capacitive transducers with neat diagrams. 8

Or

(*c*) Draw and explain inductive and capacitive transducers. 7

(*d*) Draw and explain piezoelectric and photoelectric transducers. 8

3. (*a*) Draw neat and labelled diagram of conductivity cell. Explain its working principle. 7

(*b*) Draw labelled diagram of Acelectrodynamometer and describe its working. 8

P.T.O.

Or

(*c*) What is need of pH measurement ? Explain working of pH meter. 7

(*d*) Describe in detail automation in digital instruments. 8

4. (*a*) Explain how PC is used for measurement and control. 7

(*b*) Describe role of PC in instrumentation. 8

Or

(*c*) Explain in detail application of PC for measurement of displacement. 7

(*d*) Describe use of PC for AC motor speed measurement and control. 8

5. (*a*) Give types of data acquisition system. Explain each of them. 7

(*b*) Describe the basic elements of data acquisition system. 8

Or

(*c*) What do you mean by sample ? Explain sample and hold circuit. 7

(*d*) Draw block diagram of DMM. Explain function of each block. 8