2810E536   Candidate's Seat No :_____

B.Sc. Sem-6 (Repeater) Examination
311 - Physics (Elective)
(Experimental Measurement Techniques)

Time : 2-00 Hours]   October 2021   [Max. Marks : 50

Instructions : (1) All questions in section-I carry equal marks.
　　　　　　　(2) Attempt any three questions in section I
　　　　　　　(3) Questions-9 in section II is compulsory.

SECTION I

1	(a)	Write short note on 'Systematic error'.	7
	(b)	Discuss in about Source of Uncertanity.	7
2	(a)	Discuss in detail about the Parent Distribution.	7
	(b)	Discuss in detail about Experimental Cycle.	7
3	(a)	Write short note on Transducer.	7
	(b)	Explain for Transducer (i) Dead Time (ii) Repeatability (iii) Setting Time.	7
4	(a)	Write short note on Thermistor.	7
	(b)	Write short note on Infrared Pyrometers.	7
5	(a)	Write short note on Bolo-meters.	7
	(b)	Write short note on Photo-emissive detectors.	7
6	(a)	Give application of Photo-Transistor.	7
	(b)	Describe the Thermal Radiation Temperature Measurement.	7
7	(a)	Give the application of Vacuum.	7

7 (b) What is pump speed? Obtain the equation of effective pumping speed $\dfrac{1}{S_e} = \dfrac{1}{C} + \dfrac{1}{S_p}$.　　7

8	(a)	Discuss in detail about the Turbo-molecular pump.	7
	(b)	Discuss in detail Capacitance and Ionization gauge.	7

SECTION II

9　Answer in short (any 8 out of 16) :　　　　　　　　　　　　　08
　(1)　Give the unit of Coulomb Constant.
　(2)　What is mistake?
　(3)　Which physical quantity has unit eV ?
　(4)　What is unit of Resistance.
　(5)　Give the dimesional formula of Gravitational Constant.
　(6)　What is value of boiling point of water?
　(7)　What is value of Thermal conductivity of Rubber?
　(8)　Define temperature.
　(9)　What is Full Form AMU?
　(10)　Give the unit of Pressure.
　(11)　What is Ideal gas?
　(12)　What is Optical Density?
　(13)　What is mean free path?
　(14)　Plot the graph $\ln p \to t$ to find its slope.
　(15)　Give the unit of Boltzmann's constant?
　(16)　Give the value of plank constant.