27/3/2018

DOON UNIVERSITY, DEHRADUN

Mid Semester Examination, Fourth Semester, 2017-18

Department of Physics, School of Physical Sciences

Core test paper of 5 Year (Integrated) MSc Program

Course: PHS-254: Basic Instrumentation Skills

Time Allowed: 2Hours *Maximum Marks: 30*

Note: Attempt All Questions from Sections A, B, C.

SECTION: A *(Marks:1 X 6 = 6)*

1. The deflection type instruments with a scale and a pointer are called _____ instruments.
2. How would you define the sensitivity of an instruments? What are its units?
3. What is the purpose of integrator in digital voltmeter?
4. (a)When a low resistance is connected in parallel with a galvanometer it becomes_____.
   (b) What are the purpose of horizontal and deflection plates in CRO?
5. (a) If the full scale deflection current of multimeter is 1mA, determine its sensitivity.
   (b) How a multimeter can measure ac voltage?
6. Name various types of clips used in digital multimeter.

SECTION: B *(Marks: 3 X 4 =12)*

7. What do you understand by Digital voltmeter? Explain with features. Why it is advantageous than other voltmeters?
8. How would you convert multimeter as ammeter and multimeter as ohmmeter? Elaborate in detail.
9. What do you understand by multimeter? Explain its construction and function.
10. It is required to convert a 5mA meter with 20 Ω internal resistances in to a 5A ammeter. Calculate the value of shunt resistance.

SECTION:C *(Marks: 6 X 2= 12)*

11. Explain the construction and working of cathode ray tube in detail. Illustrate the block diagram of CRO.
12. What do you understand by VTVM? How two tube VTVM is better than single tube VTVM. Explain in detail. Also write the features and advantages of VTVM.