First Semester B.Sc. Internal Examination

Subject: **Physics**   Course: **USO1CPHY02**

Date: 07 -10-2015 , Wednesday   Time: 1:30 to 2:30 pm   **Total Marks:25**

Q.1 **Answer the following questions with the correct choice. (Each of 1 Mark.)**   (3)

(1) The point of a network where three or more circuit elements are connected is known as ………. point.

    (a) junction   (b) node   (c) branch   (d) mesh.

(2) Which of these bridges is used to determine capacitance of a capacitor?

    (a) Kelvin bridge   (b) Schering bridge (c) Hay bridge (d) Maxwell bridge

(3) For a transmission grating, with increase in spectrum order (n), the resolving power ……. .

    (a) becomes infinite (b) decreases   (c) increases   (d) remains unchanged
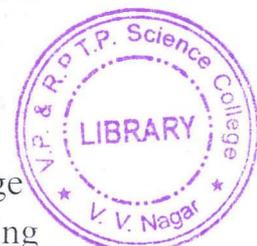
Q.2 **Answer any TWO. (Each of 2 Mark.)**   (4)

(1) State Superposition principle and explain its importance.

(2) Draw the circuit of ac bridge and state expressions for its balancing conditions.

(3) There are total 40,000 lines (i.e. N) ruled on a plane transmission grating. Determine its resolving power in the second order (i.e. n=2).

Q.3 With a suitable diagram explain what is a network and define various network terms i.e. network terminology.   (6)

OR

Q.3 With a suitable diagram explain mesh and mesh current. Explain mesh current method for analysis of a three mesh network.   (6)

Q.4 With necessary diagram explain construction and working of Hay bridge. Mention its importance.   (6)

OR

Q.4 What is a Wein Bridge? With necessary diagram explain its working and discuss its parameters.   (6)

Q.5 State principle of Michelson interferometer. Explain construction and working of a Michelson interferometer.   (6)

OR

Q.5 Define resolving power of a prism and derive expression for it.   (6)

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