

Roll No. ....

**Y – 3123**

**M.Sc. (Physics) Fourth Semester EXAMINATION,**

**May/June-2021**

Paper – 402

**INSTRUMENTATION AND COSMIC RAYS**

*Time : Three Hours*

*Maximum Marks : 85*

*Minimum Pass Marks : 29*

**Note**—Attempt *all* questions.

**Unit-I**

1. Discuss in detail the various liquid filled sensors. 17

**Unit-II**

2. Why is it necessary to grow single crystals ? Describe the single crystal diffractometer with suitable sketch diagram. 17

**Unit-III**

3. Discuss with block diagram the working of ECG amplifiers. 17

**Unit-IV**

4. Write the principle of mossbauer spectroscopy and discuss its application. Also write a note on chemical shift. 17

**Unit-V**

5. Describe in detail the Quark-model. Also explain SU(2) and SU(3) Multiplets. 17

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