Printing Page(s) : 1 **Paper Code :DSC-304**

Roll No.

B.Sc. (PCM)-20

3rd Year Examination, Academic Batch 2018

Physics-VI (Electronics)

Time : 3 Hours] *[Max. Marks : 100*

***Note**. Attempt any **five** questions. All questions carry equal marks.*

Q.1 Derive Bragg's law of crystal diffraction. Describe rotating crystal method for X ray diffraction.

Q.2 What do you mean by atoms per until cell? Calculate its value for S.C, F.C.C and B.C.C cell? Explain also the structure of sodium chloride.

Q.3 Describe solar cell. Explain the construction and principle of working of a silicon solar cell.

Q.4 Why are filtering circuit used in power supplies? Describe various types of the filters.

Q. 5 a. How are h-parameters of a CE transistor amplifier measured experimentally? Write the limitation of h- parameters.
b. What are field effect transistors (FET)? What is the difference between FET and a bipolar transistor? Write the advantages and disadvantages of FET.

Q. 6 a. What is MOSFET? Give its construction and working principle. How does it differ from FET.
b. Explain the circuit diagram of an inverting operational amplifier.

Q. 7 a. Describe the classification of transistor amplifier.
b. Explain the working of a transformer coupled transistor amplifier. Discuss its frequency response curve.

Q. 8 a. What do you mean by feedback? Discuss the principles of negative feedback in amplifiers.
b. Derive the formula for determining the separation between successive lattice planes.