

0906E519

Candidate's Seat No : _____

M.Sc Sem.-2 Examination

P - 409

Medical Physics

June 2022

Time : 2-00 Hours]

[Max. Marks : 50

Instructions: All questions in **Section – I** carry equal marks.
 Attempt any **Three** questions in **Section – I**.
 Questions in **Section – II** is **COMPULSORY**.

Section – I

- Q-I A. What are major differences between MOSFET and BJT? Draw schematic symbols for the n-channel and p-channel E-MOSFET. Discuss construction, and operations of n-channel E-MOSFET. Define K and I_d parameters for E-MOSFET 7
- B. Give brief introduction about BJT. Discuss construction, and operations of BJT. Also discuss common-emitter (CE) configuration with relevant circuit diagram 7
- Q-II A. Give brief introduction about JFET. Discuss construction, and operations of JFET. Write advantages and disadvantages of JFET. Also discuss the transfer characteristics of P-channel JFET. 7
- B. What is a photodiode? List various types of photodiodes; discuss construction and working of photodiode. 7
- Q-III A. Describe Hartley Oscillator in brief. 7
- B. Explain UJT as a relaxation oscillator. 7
- Q-IV A. Write briefly about Colpitts oscillators. 7
- B. State Barkhausen Criterion. How are 360° phase shifts produced in Wein-Bridge Oscillator? 7
- Q-V A. Differentiate inverting and non-inverting amplifiers. 7
- B. Discuss briefly voltage to current converter. 7

P.T.O

