

SUBJECT CODE NO:- P-482
FACULTY OF ENGINEERING AND TECHNOLOGY
F.E. Examination MAY/JUNE-2016
Engineering Physics
(Revised)

[Time: Two Hours]

[Max Marks:40]

“Please check whether you have got the right question paper.”

- N.B
- i) Q.No.1 is compulsory.
 - ii) Attempt any two questions from the remaining questions
 - iii) Use of non-programmable calculator is permitted.
 - iv) Figures to right indicate full marks

- Q.1 Answer the following questions (any five) 10
- a) Write the important properties of positive rays.
 - b) Draw a block diagram of C.R.O.
 - c) Explain line x-rays spectra.
 - d) Write the important industrial and engineering application of X-rays.
 - e) Distinguish between nuclear fission and nuclear fusion.
 - f) Define :
 1. Transition temperature
 2. Critical magnetic field
 - g) Define i) diffraction of light ii) R. P. of grating.
 - h) What are QWP and HWP?
- Q.2
- a) Explain the construction and working of CRT 05
 - b) State and explain Bragg's law. 05
 - c) For continuous X-ray spectrum, prove the following relation, 05
- $$\lambda_{\min} = \frac{12,400}{V} A^{\circ}$$
- Q.3
- a) Obtain an expression for the radius of n^{th} dark and bright ring 06
 - b) Explain the construction and working of Michelson's Interferometer 05
 - c) A plane grating has 15000 lines per inch. Find the angle of separation of the $5048 A^{\circ}$ and $5016 A^{\circ}$ lines of helium in the second order spectrum 04
- Q.4
- a) Explain the term 05
 1. SQUID
 2. Josephson junction
 - b) Explain the construction and working of Betatron. 05
 - c) Explain nuclear chain reaction. 05
- Q.5 Write short notes on following 15
- a) Bain bridge mass spectrograph
 - b) Theory of plane transmission grating
 - c) Nuclear reactor