

Question paper pattern for External Examination

Sub Code:19KBPHY22

Khaja Bandanawaz University

Faculty of Engineering & Technology

Second Semester B.E.Degree Examination

Sub: Engineering Physics

Time:3Hrs

Max.Marks:100

Section-A

I. Answer any TEN Question from the following. (02 Marks Each)

Q1. What is Population Inversion.

Q2. Define angle of acceptance.

Q3. What is Hall voltage.

Q4. What are Nanomaterials.

Q5. Define Rigidity Modulus.

Q6. Define Poisson's Ratio

Q7. Define System

Q8. Define Thermodynamics

Q9. Define Space lattice.

Q10. Define Polymorphism.

Q11. Define Allotropy

Q12. Define Spontaneous Emission.

Q13. Define Fractional Index change

Q14. What is Carbon Nanotube?

Q15. Define Elasticity.

Section-B

II. Answer any FIVE full Question from the following. (08 Marks Each)

- Q1. Explain the construction and working He-Ne laser with neat diagram.
- Q2. Explain different types of optical fibers with its refractive index profile.
- Q3. Derive an expression for Fermi-level in an intrinsic semiconductor.
- Q4. Explain top down approach with neat figure.
- Q5. Obtain an expression for Rigidity modulus interms of α and β .
- Q6. Derive Gibbs and Helmholtz functions.
- Q7. Describe briefly the seven crystal systems .
- Q8. Define coordination number and packing factor. Calculate the packing factor for BCC & FCC structure.

Section-C

III. Answer any FOUR full Question from the following. (10 Marks Each)

- Q1. What is Population Inversion? Explain different types of optical fibers with its refractive index profile.
- Q2. What is Hall effect? Derive an expression for Hall voltage and Hall coefficient.
- Q3. Derive an expression for Single cantilever .
- Q4. Define System, types of system, Types of thermodynamics process.
- Q5. Give a brief account for Fermi-Dirac distribution theory. Obtain the expression for Fermienergy at 0 K.
- Q6. Derive an Expression for bending of beams.
- Q7. Define Laser Explain the construction and working He-Ne laser with neat diagram.

