Bachelor of Computer Applications

FIRST SEMESTER EXAMINATION

Code No.	Paper	L	T/P	Credits	Marks Internal	Marks External
THEROY PAPERS						
BCA 101	Mathematics – I	3	1	4	25	75
BCA 103	Technical Communication	3	0	3	25	75
BCA 105	Introduction to Programming Language using C	3	1	4	25	75
BCA 107	Introduction to Computers & IT	3	1	4	25	75
BCA 109	Physics	3	1	4	25	75
PRACTICALS						
BCA 151	Practical – I C Prog. Lab	0	6	3	40	60
BCA 153	Practical – II IT Lab	0	6	3	40	60
BCA 155*	Communication Skills	2	0	2	100	------
	Total	**17**	**16**	**27**	**305**	**495**

***NUES**

TOTAL MARKS : 80

Note : A Minimum of 40 Lectures is mandatory for each course.Syllabus of Bachelor of Computer Applications (BCA), approved by BCA Coordination Committee on 26th July 2011 & Sub-Committee Academic Council held 28th July 2011. W.e.f. academic session 2011-12

Paper Code : BCA 109 **L T C**
Paper ID: 20109 **3 1 4**
Paper : Physics
Aim: To know the fundamentals of Physics
Objectives

- To get the knowledge about the basic laws of nature such as motion, work, power and energy
- To study the electrostatics, semiconductors and devices.

INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75

1. Question No. 1 should be compulsory and over the entire syllabus. It should be of **25** marks and it may contain objective or short type question.
2. Rest of the paper shall contain two questions from each unit. However students will attempt only one question from each unit. Each question should be 12.5 marks.

UNIT – I

Law of Motion: Force and Inertia, Law of inertia or Newton's first law of motion, Newton's Second law of motion, Newton's third law of motion and it's applications, Basic forces in nature, Weight of body in lift, Equilibrium of concurrent forces, Lemi's Theorem
Friction: Cause of friction, Types of friction, Laws of friction, Angle of friction and repose, Centripetal and centrifugal force, velocity of vehicle on curved leveled and banked road.
[T1] [T2] **[No. of Hrs: 11]**

UNIT – II

Work, Energy & Power: Work, Conservative force, Power, Kinetic Energy, Work energy theorem, Potential Energy, Conservation of gravitational P.E. into K.E., P.E. of spring.
Collisions: Types of collision, elastic collision in 1D & 2D, Inelastic collision in 1D, Perfectly inelastic collision in 1D. **[T1] [T2]** **[No. of Hrs: 11]**

UNIT – III

Electricity & electromagnetism: Electric charge, Electron theory of electrification, Frictional electricity, Properties of electric charge, Coulomb's Law, Superposition Principle, Electric field intensity, Electric Lines of forces.
Electrostatics: Line integral of electric field, Electrostatic potential, State & Proof of Gauss's theorem.
Capacitance: Principal of Capacitor, Parallel and spherical capacitors, Grouping of capacitors and their capacitance, Effect of dielectric in capacitors.
Current Electricity: Current, Ohm's Law, Resistance, Grouping of resistance, Krichoff's rule, Wheatstone bridge, Slide Wire Bridge. **[T3] [T4]** **[No. of Hrs: 11]**

UNIT – IV:

Structure of Atom: Thomson's atomic model, Rutherford's alpha scattering experiment and atomic model, Postulates of Bohr's Model.
Semiconductors: Energy bands in solids, Difference between metals, insulators and semi conductors, Current carriers in semiconductors, Intrinsic semiconductor, Doping, Extrinsic semiconductors, Formation of p-n junction, Biasing of p-n junction, Light emitting diode.
Transistors: Action of n-p-n & p-n-p transistors, Advantages of transistors, Integrated Circuit.**[T3] [T4]** **[No. of Hrs: 11]**

TEXTBOOKS:

[T1]: S.K. Gupta, “Modern ABC of Physics”, Vol1, Modern Publishers.**[T2]**: Pradeep, “Fundamental Physics”, Class XI, Pradeep Publications.
[T3]: S.K. Gupta, “Modern ABC of Physics”, Vol2, Modern Publishers.
[T4]: Pradeep, “Fundamental Physics”, Class XII, Pradeep Publications.