

**B.L.D.E Association's**  
***S. B. Arts and K. C. P. Science College,***  
***Vijayapur***



**Department of PG Studies in Physics**

**BRIDGE COURSE**

**For**  
**First Semester PG Students OF PHYSICS**  
**(For the Academic Year 2022-23)**

**REPORT**

**2022-23**



B. L. D. E. ASSOCIATION'S

**S. B. ARTS AND K. C. P. SCIENCE COLLEGE**

Smt. Bangaramma Sajjan Campus, Shri B. M. Patil Road (Solapur Road), Vijayapur-586 103

Accredited with CGPA of 2.99 at 'B' Grade in 4<sup>th</sup> Cycle by NAAC

(Affiliated to Rani Channamma University, Belagavi)



Phone: (08352) 262770, Extn. 2223, 2224 Website: [www.bldeasbkcp.ac.in](http://www.bldeasbkcp.ac.in) E-mail: [bldeasbkcp@gmail.com](mailto:bldeasbkcp@gmail.com)

Date: 2<sup>nd</sup>-Jan-2023

**Department of PG Studies in Physics**

**Bridge Course 2022-2023**

**NOTICE**

Notice to inform about conducting Bridge course for Academic year 2022-2023 for M. Sc I semester Physics students. Classes for Bridge course will commence from 5<sup>th</sup> of January 2023 to 11<sup>th</sup> of January 2023.

All the M. Sc. 1<sup>st</sup> sem students have to attend the classes without fail.



**Coordinator  
Co-ordinator**

Department of PG Studies in Physics  
S.B. Arts and KCP Science College  
VIJAYAPUR



**IQAC Coordinator**

**IQAC, Co-ordinator**  
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Department of PG Studies in PHYSICS  
Bridge Course 2022-2023

**TIME-TABLE 2022-2023**

Time	05 Jan 2023	06 Jan 2023	07 Jan 2023	09 Jan 2023	10 Jan 2023	11 Jan 2023
3.00 to 4.00	GMN	SPS	SPS	BAP	SVP	SVP
4.00 to 5.00				GMN		BAP

**Staff Members:**

Dr.Girija M.Nimbal (GMN)

Prof. Soumya Sajjan (SPS)

Prof. Swati Palbhavi(SVP)

Prof. Basavajyoti Patil(BAP)

*Devi*  
Coordinator  
Co-ordinator

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*[Signature]*  
IQAC Coordinator

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## SYLLABUS

No. of teaching hours: ~~01~~ hours for each module

**Module 1: Classical Mechanics:** Centre of Mass, Motion of Centre of mass, Pure Translational and Rotational motion, Torque and angular momentum, Principle of moments (Moment of Inertia), Radius of Gyration, Generalized Motion, and Kinematics of rotational motion about a fixed axis.

**Module 2: Mechanical Properties of Solids and Fluids:** Elastic behaviours of solids, Hooke's Law, Young's Modulus, Shear Modulus, Bulk Modulus, Applications of Elastic behaviours of materials, Compressibility, Viscosity, Relative density, Pascal's Law, Streamline Flow, Bernoulli's Principle, Surface Tension, Drops and Bubbles

**Module 3: Waves and Oscillations:** Rectilinear motion, Oscillations or Vibrations, Simple Harmonic Motion, Damped Harmonic motion: Real oscillatory system, Forced or Driven oscillation, TYPES OF WAVES, Superposition of Waves, Reflection and Refraction, Standing Waves and Normal Modes, Beats, Resonance, Doppler's Effect

**Module 4: Electricity and Magnetism:** Physical concepts of gradient, divergence, and curl; Laplacian operator, Concept of electricity and magnetism, Coulomb's law, Electrostatics, Magnetostatics, the Lorentz force, Maxwell's equations

**Module 5: Electromagnetic Signal:** Introduction to Maxwell's equations, The dynamical magnetic field, The dynamical electric field, Electromagnetic Waves

**Module 6: Semiconductor Electronics:** Classification of metals, conductors and semiconductors, Fermi Level, Intrinsic Semiconductor, Extrinsic Semiconductor, p-n junction, Semiconductor Diode, Half-Wave Rectifier, Full-Wave Rectifier, Zener diode, Photodiode, Light emitting diode, Junction Transistor

**Module 7: Atomic and Nuclear Physics:** Matters, Atoms, Atomic Theory: Atomic Theory by John Dalton, Atomic Theory by J. J Thompson, Atomic Theory by Ernest Rutherford, Atomic Theory by James Chadwick, Discovery of the Neutron, Bohr's Postulates, Proton, Neutron, Electron, Limitations of Bohr's Theory

  
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Department of PG Studies in PHYSICS  
Bridge Course 2022-2023

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**STUDENTS LIST**

Sl. No	Student Name	Roll. No
1	Shweta Sulpi	1
2	Anasuya Rajashekar Math	2
3	Netravati B Goundi	3
4	Niharika V Goudar	4
5	Mahammadajakariya Gadyal	5
6	Swati Mathapati	6
7	Misba Patil	7
8	Rohit Khot	8
9	Surajkumar Patil	9
10	Pallavi S Santi	10
11	Siddu Aldi	11
12	Soundarya Kotabagi	12
13	Basavaraj Revadihal	13
14	Vinodkumar Hadapad	14
15	Shweta Mallikarjun Hatti	15
16	Sheshadri R Hiremath	16
17	Akshata Malaji	17
18	Laxmi Bakali	18
19	Ashwini Deshpande	19
20	Rakesh Chougala	20

*Alpige*  
21/1/23

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**Attendance list of M. Sc I semester students**

Roll No.	Class-1 Date: 5/1/23	Class-2 Date: 6/1/23	Class-3 Date: 7/1/23	Class-4 Date: 9/1/23	Class-5 Date: 9/1/23	Class-6 Date: 10/1/23	Class-7 Date: 11/1/23	Class-8 Date: 11/1/23
1	Present	A	Present	Present	Present	Present	Present	Present
2	Present	Present	Present	Present	A	Present	Present	Present
3	Present	Present	Present	Present	A	Present	Present	Present
4	Present	A	Present	Present	Present	Present	Present	Present
5	Present	Present	Present	Present	Present	A	Present	Present
6	Present	Present	Present	Present	Present	Present	Present	Present
7	Present	Present	Present	Present	Present	Present	Present	Present
8	Present	Present	A	Present	Present	Present	Present	Present
9	Present	Present	Present	Present	Present	Present	Present	Present
10	A	Present	Present	Present	Present	Present	Present	Present
11	Present	Present	Present	Present	Present	Present	Present	A
12	A	Present	Present	Present	Present	Present	Present	Present
13	Present	Present	Present	Present	Present	Present	Present	Present
14	A	Present	Present	A	Present	Present	Present	Present
15	Present	Present	Present	Present	Present	Present	A	Present
16	Present	Present	Present	A	Present	Present	Present	Present
17	Present	Present	Present	Present	Present	Present	Present	Present
18	A	Present	Present	Present	Present	A	Present	Present
19	A	Present	Present	Present	Present	A	Present	Present
20	Present	Present	Present	Present	Present	Present	Present	Present

Signature  
18/1/23

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Date: 12<sup>th</sup> Jan-2023

## Department of PG Studies in Physics

### Bridge Course 2022-2023

#### NOTICE

This is to inform M. Sc I semester Physics students about conducting Bridge course test for Academic year 2022-2023. The test will be conducted on 17<sup>th</sup> of January 2023. All the M. Sc 1<sup>st</sup> sem students have to attend the test without fail.

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**Question Paper**

**Name:**

**Roll No.:**

**All questions are compulsory. Each question carries 2 marks**

**25q X 2M = 50M**

- 1) What are the charge carriers in the semiconductors?  
a) Electrons                      b) Holes                      c) Charges                      d) Electrons and holes
- 2) The center of mass of a system of particles does not depend on \_\_\_\_\_  
a) Masses of the particles                      b) Force on the particles  
c) Relative distance between the particles                      d) Position of the particles
- 3) Sinusoidal wave form is \_\_\_\_\_  
a) Cosine wave                      b) Sine wave                      c) Sine and Cosine Waves                      d) None of the above
- 4) The ratio of change in volume ( $\Delta V$ ) of the body to the original volume ( $V$ ) is called \_\_\_\_\_  
a) Volume stress                      b) Tensile stress                      c) Compressive stress                      d) Volume strain
- 5) When external forces acting on a body are zero, then its center of mass \_\_\_\_\_  
a) Remains stationary                      b) Moves with uniform velocity  
c) Either remains stationary or moves with uniform velocity                      d) None of these
- 6) SI Unit of stress is \_\_\_\_\_  
a)  $\text{Nm}^{-2}$                       b)  $\Omega^{-1}\text{m}^{-1}$                       c) weber                      d) tesla
- 7) A Semiconductor is formed by \_\_\_\_\_ bonds  
a) Covalent bond                      b) Co-ordinate bond                      c) Electrovalent bond                      d) None of the above
- 8) The center of mass of a body is located \_\_\_\_\_  
a) outside the system                      b) Inside the system  
c) Inside or Outside the system                      d) At the center of the system  
e)
- 9) Motion of a particle in a straight line is \_\_\_\_\_  
a) Periodic motion                      b) Circular motion                      c) Rectilinear motion                      d) Oscillatory motion
- 10) The rate of change of angular velocity is \_\_\_\_\_  
a) Angular momentum                      b) Torque                      c) Angular acceleration                      d) Moment of inertia
- 11) In SHM, for mechanical oscillation the system must possess \_\_\_\_\_  
a) Inertia                      b) Elasticity                      c) Both (a) and (b)                      d) Neither (a) nor (b)



- 12) If the object has negligible size and the rod is massless, then the pendulum is \_\_\_\_\_  
 a) Spring Pendulum   b) Simple pendulum   c) Compound pendulum   d) Bar pendulum
- 13) Mechanical waves are called \_\_\_\_\_  
 a) Elastic wave   b) Transverse wave   c) Longitudinal waves   d) Electromagnetic waves
- 14) Which of the following waves can be transmitted through solids, liquids and gases?  
 a) Transverse wave   b) Mechanical wave   c) Electromagnetic waves   d) Longitudinal waves
- 15) Which is the fundamental property of wave?  
 a) Temperature   b) Frequency   c) Pressure   d) Medium
- 16) In which medium sound travels faster?  
 a) Liquids   b) Solids   c) Gas   d) Water vapors
- 17) What are the charge carriers in the semiconductors?  
 d) Electrons   e) Holes   f) Charges   d)Electrons and holes
- 18) Nucleus is \_\_\_\_\_  
 a) Positively charged   b) Negatively charged   c) Neutral   d) None
- 19) The Semiconductor with minimum energy gap is \_\_\_\_\_  
 a) Germanium   b) Carbon   c) Silicon   d)Sulphur
- 20) In an intrinsic semiconductor the number free electrons \_\_\_\_\_  
 a) Equals the number of holes   b) Less than the number of holes  
 c) Is greater than the number of holes   d) None of the above
- 21) At 0 K a pure semiconductor behaves like \_\_\_\_\_  
 a) Conductors   b) Insulators   c) Superconductors   d)None of the above
- 22) The nucleus consist of \_\_\_\_\_  
 a) Neutrons   b) Protons   c)Neutron and Proton   d)Electron and neutron
- 23) Which of the following rays are emitted during radioactivity?  
 a) Alpha ray   b) Beta ray   C)Gamma ray   d)All of the above
- 24) The half-life of radioactive nuclei is \_\_\_\_\_  
 a)  $0.693/\lambda$    b)  $0.793/\lambda$    c)  $0.693\lambda$    d)  $0.793\lambda$
- 25) Simple harmonic motion is specialized form of \_\_\_\_\_ motion  
 a)Rotatory motion   b)Circular motion   C)Oscillatory motion   d)Periodic motion

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**BRIDGE COURSE MARKS LIST 2022-2023**

**Sub: Physics**

**Class: M. Sc- I sem**

Roll No	Marks	Signature
1	40	
2	46	
3	42	
4	40	
5	46	
6	46	
7	40	
8	44	
9	40	
10	42	
11	38	
12	38	
13	36	
14	36	
15	40	
16	36	
17	38	
18	36	
19	36	
20	38	

Coordinator

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