BEARYS INSTITUTE OF TECHNOLOGY

Bearys Institute of Technology MANGALORE

(Approved by AICTE, New Delhi, Affiliated to Visvesvaraya Technological University, Belagavi)
Near Mangalore University, Lands End, Innoli
Mangaluru, Karnataka-574153

Department of PHYSICS

COURSE FILE

COURSE NAME	**: Engineering Physics**
COURSE CODE	**: 21PHY12**
NBA CODE	**: BSA102**
SEMESTER & SECTION	**: I sem & A-SECTION**
ACADEMIC YEAR	**: 2021-2022**
FACULTY INCHARGE	**: Dr. Vinutha P R**

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COURSE FILE CONTENT

1. Course Cover Page
2. List of Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)
3. Individual Time table
4. Class Timetable
5. Syllabus with LTP (VTU Original)
6. Course Closure Report (Previous Semester)
7. List of Course Outcomes (COs)
8. COs-POs-PSOs Mapping
9. Curriculum Gap analysis
10. Content beyond the syllabus planned
11. Action plans based on suggestion made in Course Closure Report (previous semester)
12. Lesson Plan
13. Direct Assessment */ Indirect Assessment# Tools planned in current cycle (Refer to the Table in next page)
14. Direct Assessment
    a. CIE Question Papers
    b. Moderation Forms
    c. Scheme of Evaluation
    d. CIE and Assignment CO Attainment (Refer OBE Excel)
15. Indirect Assessment#
    a. CO Attainment (Refer OBE Excel)
16. Details of Innovative techniques used in class room teaching process (*If any*)
17. References
    a. Textbooks Citations
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18. Student Feedback on Course Outcomes
19. Attendance Register
20. Result Analysis
21. Course Closure Report (Current Semester)

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PROGRAM OUTCOMES (POs)

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/ Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

8. **Ethics :** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and Team Work :** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance :** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning :** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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4 . Timetable

	1	2	3	4		5	6	7
	09:20 AM 10:16 AM	10:15 AM 11:10 AM	11:10 AM 12:05 PM	12:05 PM 01:00 PM	01:00 PM 02:00 PM	02:00 PM 02:50 PM	02:50 PM 03:40 PM	03:40 PM 04:30 PM
MON			BE 21PHY12 Science Semester 1 A				BE 21PHY12 Science Semester 1 A	
TUE				BE 21PHY12 Science Semester 1 A				
WED		BE 21PHYL16 Science Semester 1 A						BE 21PHY12 Science Semester 1 A
THU		BE 21PHY12 Science Semester 1 A						
FRI	BE 21PHYL16 Science Semester 1 A					BE 21PHY12 Science Semester 1 A	BE 18KSK39 ME / CV Semester 3 A	BE 18KSK39 CV Semester 3 A
SAT	BE 21PHY12 Science Semester 1 A							

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HOD

BEARYS INSTITUTE OF TECHNOLOGY, MANGALURU

CLASS ROOM NO: A403

TIME TABLE-ODD SEM 2021-22

SEMESTER: 1 A -SECTION(PHYSICS GROUP) WEF:-

DAY	9:15-10:15 (1)	10:15-11:05 (2)	11:05-11:20	11:20-12:10 (3)	12:10-1:00 (4)	1:00-2:00	2:00-2:50 (5)	2:50-3:40 (6)	3:40-4:30 (7)
MONDAY	MAT(1)	CIV(1)	BREAK	PHY(1)	SFH(1)	LUNCH BREAK	ELE(1)	PHY(2)	CIV(2)
TUESDAY	ENG(1)	MAT(2)		ELE(2)	PHY(3)		EVN/ELE		
WEDNESDAY	ELE(3)	PHY/EVN LAB		PHY/EVN LAB			CIV(3)	MAT(3)	PHY(T)
THURSDAY	CIV(4)	PHY(4)		EVNL			ELE(4)	CIV(5)	MAT(4)
FRIDAY	PHY/ELE LAB			PHY/ELE LAB			PHY(5)	MAT(5 & T)	
SATURDAY	PHY(6)	PPT(MAT)		CIV(6)	ENG(2)		SFH(2)	ELE(T)	CIV(T)

Sl. No	Subject Name	Subject Code	Name of Faculty Member
1	Calculus And Linear Algebra	21MAT11	Prof.SHAIKH AMEER BASHA
2	ENGINEERING PHYSICS	21PHY12	Dr.VINUTHA P R
3	Basic Electrical Engineering	21ELE13	Prof . FAMEEZA
4	Civil Engineering and Mechanics	21CIV14	Prof . ALTAMASHUDDIN KHAN
5	Engineering Visualization	21EVNL15	Dr. IMRAN MOKASHI
6	Engineering Physics Laboratory	21PHYL16	Dr. VINUTHA P R
7	Basic Electrical Engineering Laboratory	21ELEL17	Prof . FAMEEZA &Prof. NAFEESATH
8	Communicative English	21EGH18	Prof .JOYSON B MIRANDA
9	Scientific foundations of health	21SFH19	Prof . IMRAN U A

HOD (Basic Science)

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I/II Semester

Engineering Physics			
Course Code	21PHY12/22	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:2:0:1	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03 Hours

Course objectives: This course(21PHY12/22) will enable the students to

- Learn the basic concepts of Physics which are essential in understanding and solving Engineering related challenges.
- Gain the knowledge of problem solving and its practical applications.
- Signify the application of sensitive instrumentation for Nano-scale system.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Apart from conventional lecture methods various types of innovative teaching techniques through videos, animation films may be adopted so that the delivered lesson can progress the students in theoretical, applied and practical skills in physics.
2. State the necessity of physics in engineering studies and offer real life examples.
3. Seminars and Quizzes may be arranged for students in respective subjects to develop skills.
4. Encourage the students for group learning to improve their creativity and analytical skills.
5. While teaching show how every concepts can be applied to the real world. This helps the students to expand understanding level.
6. Support and guide the students for self-study.
7. Ask some higher order thinking questions in the class, which promotes critical thinking.
8. Inspire the students towards the studies by giving new ideas and examples.

Module-1

Oscillations and Waves: **08 Hours**

Free Oscillations: Basics of SHM, derivation of differential equation for SHM. Mechanical simple harmonic oscillators (spring constant by series and parallel combination). Equation of motion for free oscillations, Natural frequency of oscillations.

Damped Oscillations: Theory of damped oscillations (derivation), over damping, critical & under damping (only graphical representation), quality factor.

ForcedOscillations: Theory of forced oscillations (derivation) and resonance, sharpness of resonance.

Shock waves: Mach number, Properties of Shock waves, Construction and working of Reddy shock tube, applications of shock waves, Numerical problems.

Teaching-Learning Process	Chalk and talk, Power point presentation, Videos **Practical Topics:** 1.Spring in series and parallel combination **Self-study Component:** Basics of SHM

Module-2

Modern Physics & Quantum Mechanics: **08 Hours**

Introduction to blackbody radiation spectrum- Wien's law, Rayleigh Jean's law, Stefan -Boltzmann law and Planck's law (qualitative), Deduction of Wien's law and Rayleigh Jeans law from Planck's law. Wave-Particle dualism, de-Broglie hypothesis, de-Broglie wavelength. Heisenberg's uncertainty principle and its physical significance, Application of uncertainty principle-Non-existence of electron in the nucleus (relativistic case), Wave function-Properties, Physical significance, Probability density, Normalization, Eigen values and Eigen functions. Time independent Schrödinger wave equation. Particle in a box- Energy Eigen values and probability densities, Numerical problems.

Teaching-Learning Process	Chalk and talk, Power point presentation, Videos **Practical Topics:** 1.Verification of Stefan's Law **Self-study Component:** Wave- Particle dualism, de-Broglie hypothesis , de- Broglie wavelength.

Module-3

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Lasers & Optical Fibers: **08 Hours**

Lasers: Interaction of radiation with matter, Einstein's coefficients (derivation of expression for energy density). Requisites of a Laser system. Conditions for Laser action. Principle, Construction and working of CO_2 and semiconductor Lasers. Application of Lasers in Defence (Laser range finder) and medical applications- Eye surgery and skin treatment.

Optical Fibers: Propagation mechanism, angle of acceptance, Numerical aperture, Modes of propagation, Types of optical fibers, Attenuation and Mention of expression for attenuation coefficient. Discussion of block diagram of point to point communication, Optical fiber sensors- Intensity based displacement sensor and Temperature sensor based on phase modulation, Merits and demerits, Numerical problems.

Teaching-Learning Process	Chalk and talk, Power point presentation, Videos **Practical Topics:** 1. wavelength of LASER source 2. Optical fiber **Self-study Component:** Properties of Laser and comparison with ordinary source

Module-4

Electrical Conductivity in Solids: **08 Hours**

Classical free electron theory: Drude- Lorentz theory & Assumptions, Expression for electrical conductivity (no derivation), Failures of classical free-electron theory.

Quantum free electron theory: Assumptions, Density of states (no derivation), Fermi-energy, Fermi factor & its temperature dependence, Fermi - Dirac Statistics, Expression for electrical conductivity (derivation), Merits of Quantum free electron theory.

Physics of Semiconductors: Fermi level in intrinsic semiconductors, Expression for concentration of electrons in conduction band, Holes concentration in valance band (only mention the expression), Conductivity of semiconductors (derivation), Hall effect, Expression for Hall coefficient (derivation).

Dielectrics: Electric dipole, Dipole moment, Polarization of dielectric materials, Types of polarizations. Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field). Claussius-Mossotti equation (derivation), Numerical problems.

Teaching-Learning Process	Chalk and talk, Power point presentation, Videos **Practical Topics:** 1.Fermi Energy of a material 2. Resistivity of a material **Self-study Component:** Electric dipole, Dipole moment, Polarization of dielectric materials

Module-5

Material Characterization Techniques and Instrumentation: **08 Hours**

Introduction to materials: Nanomaterials and nanocomposites. Principle, construction and working of X-ray Diffractometer, crystal size determination by Scherrer equation. Principle, construction, working and applications of -Atomic Force Microscope (AFM), X-ray Photoelectron Spectroscope (XPS), Scanning Electron Microscope (SEM), Transmission Electron Microscope (TEM) Numerical problems.

Teaching-Learning Process	Chalk and talk, Power point presentation, Videos **Self study Component:**X-ray diffractometer.

Course outcome (Course Skill Set)

At the end of the course the student will be able to :

1. Interpret the types of mechanical vibrations and their applications, the role of Shock waves in various fields.
2. Demonstrate the quantisation of energy for microscopic system.
3. App[y LASER and Optical fibers in opto electronic system.
4. Illustrate merits of quantum free electron theory and applications of Hall effect.
5. Analyse the importance of XRD and Electron Microscopy in Nano material characterization.

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Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50)in the semester-end examination(SEE).

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour)**

1. First test at the end of 5th week of the semester
2. Second test at the end of the 10th week of the semester
3. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

4. First assignment at the end of 4th week of the semester
5. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks (duration 01 hours)**

6. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours)**

1. The question paper will have ten questions. Each question is set for 20 marks.
2. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

The students have to answer 5 full questions, selecting one full question from each module.

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Suggested Learning Resources:

Text Books:

1. A Text book of Engineering Physics- M.N. Avadhanulu and P.G. Kshirsagar, 10th revised Ed, S. Chand. & Company Ltd, New Delhi.
2. An Introduction to Lasers theory and applications by M.N.Avadhanulu and P.S.Hemne revised Edition 2012 . S. Chand and company Ltd -New Delhi.
3. Engineering Physics-Gaur and Gupta-Dhanpat Rai Publications-2017.
4. Concepts of Modern Physics-Arthur Beiser: 6th Ed;Tata McGraw Hill Edu Pvt Ltd- New Delhi 2006.
5. X-ray diffraction- B E Warren published by Courier Corporation.
6. Nano Composite Materials-Synthesis, Properties and Applications, J. Parameswaranpillai, N.Hameed, T.Kurian, Y. Yu, CRC Press.
7. Fundamentals of Fibre Optics in Telecommunication & Sensor Systems, B.P. Pal, New Age International Publishers.

Reference Books:

1. Introduction to Mechanics — M.K. Verma: 2nd Ed, University Press(India) Pvt Ltd, Hyderabad 2009.
2. Lasers and Non Linear Optics – B.B. Laud, 3rd Ed, New Age International Publishers 2011.
3. LASERS Principles, Types and Applications by K.R. Nambiar-New Age International Publishers.
4. Solid State Physics-S O Pillai, 8th Ed- New Age International Publishers-2018.
5. Shock waves made simple- Chintoo S Kumar, K Takayama and KPJ Reddy: Willey India Pvt. Ltd. New Delhi2014.
6. Materials Characterization Techniques-Sam Zhang, Lin Li, Ashok Kumar, CRC Press, First Edition, 2008.
7. Characterization of Materials- Mitra P.K . Prentice Hall India Learning Private Limited.
8. Nanoscience and Nanotechnology: Fundamentals to Frontiers – M.S.Ramachandra Rao & Shubra Singh, Wiley India Pvt Ltd .

Web links and Video Lectures (e-Resources):

https://www.britannica.com/technology/laser.k
https://nptel.ac.in/courses/115/102/115102124/
https://nptel.ac.in/courses/115/104/115104096/
http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html
https://onlinecourses.nptel.ac.in/noc20_mm14/preview

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

http://nptel.ac.in
https://swayam.gov.in
https://www.vlab.co.in/participating-institute-amrita-vishwa-vidyapeetham

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COURSE OUTCOMES

CO1	Understand various types of oscillations and their implications ,the role of Shock waves in various fields.	CL3
CO2	Compute Eigen Values ,Eigen Functions and the momentum of atomic and sub atomic particals usind 1-D Schrodinger's Wave Equation.	CL4
CO3	Apprehend the basics of Laser & Optical fibers with different types and their applications in Various fields.	CL4
CO4	Understand electrical conductivity in solid materials	CL4
CO5	Understand the various measurement techniques.	CL5

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CO-PO-PSO MAPPING

CO No.	Programme Outcomes (POs)												Programme Specific Outcome (PSOs)		
	1	2	3	4	5	6	7	8	9	10	11	12	1		
CO1	3	3											2		
CO2	3	3											2		
CO3	3	3											2		
CO4	3	3											2		
CO5	3	3											2		

JUSTIFICATION FOR CO-PO MAPPING:

MAPPING	LEVEL	JUSTIFICATION
CO1-PO1	3	CO1 is mapped to PO1 with high relevance because it provides strong Engineering knowledge especially in the field of construction and mechanical systems CO1 is mapped to PO2 with moderate relevance because it help in the analysis of engineering problems
CO1-PO2	3	
CO2-PO1	3	CO2 is mapped to PO1 with high relevance because it has direct applications in the field of optical signal transport and fiber optics CO2 is mapped to PO2 with high relevance because it help in the analysis of engineering problems in the field of fiber optics
CO2-PO2	3	
CO3-PO1	3	CO3 is mapped to PO1 and PO2 with High relevance because it provides an immense application in the Civil and Mechanical Engineering
CO3-PO2	3	
CO4-PO1	3	CO4 is mapped to PO1 and PO2, with High relevance because the topics included in the section CO4 are very much relevant in scientific applications such as astrophysics. It also helps in computing complex problems associated with astronomy. It has also direct application in the field of medicine and beneficiary to the society.
CO4-PO2	3	
CO5-PO1	3	CO5 is mapped to PO1 with High relevance because the topics provide great information and knowledge related to the materials and their electric and transport mechanics which has significant influence in semiconductor industry and optoelectronics. CO5 is mapped to PO1 with high relevance it helps to Analyze the importance of XRD and Electron Microscopy in Nano material characterization
CO5-PO1	3	

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JUSTIFICATION FOR CO-PSO MAPPING:

MAPPING	LEVEL	JUSTIFICATION
CO1-PSO3	2	
CO2-PSO3	2	
CO3-PSO3	2	
CO4-PSO3	2	
CO5-PSO3	2	

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6 . Course Information

6 . 2

Semester : 1 **Section :** A **Course :** ENGINEERING PHYSICS

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
Module 1								
15	P	13 Jan 2022	Oscillations: Basics of SHM, derivation of equation for SHM				Lecture	
15	E	13 Jan 2022	Oscillations: Basics of SHM, derivation of equation for SHM	Text 1	CO 1	Remember	Lecture	
16	P	14 Jan 2022	Mechanical simple harmonic oscillators (spring constant by series and parallel combination), Equation of motion for free oscillations				Lecture	
16	E	17 Jan 2022	Mechanical simple harmonic oscillators (spring constant by series and parallel combination), Equation of motion for free oscillations	Text 1	CO 1	Remember	Lecture	
17	P	15 Jan 2022	Natural frequency of oscillations, Damped Oscillations: Theory of damped oscillations (derivation)				Lecture	
17	E	17 Jan 2022	Naturalfrequency of oscillations, Damped Oscillations: Theory of damped oscillations (derivation)	Text 1	CO 1	Understand	Lecture	
18	P	17 Jan 2022	over damping				Lecture	
18	E	19 Jan 2022	critical & underdamping (graphical representation), quality factor	Text 1	CO 1	Understand	Lecture	
19	P	17 Jan 2022	critical & under damping (graphical representation)				Lecture	
19	E	20 Jan 2022	critical & underdamping (graphical representation), quality factor	Text 1	CO 1	Remember	Lecture	
20	P	18 Jan 2022	quality factor				Lecture	
20	E	20 Jan 2022	quality factor, Forced Oscillations: Theory of forced oscillations (derivation) and resonance, sharpness of resonance	Text 1	CO 1	Remember	Lecture	
21	P	19 Jan 2022	Forced Oscillations: Theory of forced oscillations (derivation) and resonance				Lecture	

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
21	E	21 Jan 2022	Shock waves: Mach number, Properties of Shock waves	Text 1	CO 1	Remember	Lecture	
22	P	20 Jan 2022	sharpness of resonance				Lecture	
22	E	22 Jan 2022	Construction and working of Reddy shock tube, Properties of Shock waves, applications of shock waves	Text 1	CO 1	Remember	Lecture	
23	P	21 Jan 2022	Shock waves: Mach number				Lecture	
23	E	22 Jan 2022	Shock waves: Mach number, Properties of Shock waves, applications of shock waves		CO 1	Remember	Lecture	
24	P	22 Jan 2022	Properties of Shock waves				Lecture	
24	E	28 Jan 2022	Properties of Shock waves, Construction and working of Reddy shock tube	Text 1	CO 1	Remember	Lecture	
25	P	31 Jan 2022	Construction and working of Reddy shock tube		CO 1	Understand	Lecture	
25	E	29 Jan 2022	Construction and working of Reddy shock tube, applications of shock waves	Text 1	CO 1	Understand	Lecture	
26	P	1 Feb 2022	applications of shock waves		CO 1	Understand	Lecture	
26	E	31 Jan 2022	applications of shock waves, Numerical problems	Text 1	CO 1	Understand	Lecture	
27	P	3 Feb 2022	Numerical problems		CO 1	Understand	Lecture	
27	E	1 Feb 2022	Numerical problems	Text 1	CO 1	Understand	Lecture	
28	P	8 Feb 2022	Self-study Component: Basics of SHM		CO 1	Understand	Lecture	
28	E	3 Feb 2022	Self-study Component: Basics of SHM	Text 1	CO 1	Remember	Lecture	
71	P	27 Apr 2022	Oscillations: Basics of SHM, derivation of equation for SHM	Text 1	CO 1	Remember	Lecture	
71	E	27 Apr 2022	Oscillations: Basics of SHM, derivation of equation for SHM	Text 1	CO 1	Remember	Lecture	
Module 2								
29	P	11 Feb 2022	Introduction to blackbody radiation spectrum- Wien's law, Rayleigh Jean's law				Lecture	
29	E	4 Feb 2022	Introduction to blackbody radiation spectrum- Wien's law, Rayleigh Jean's law	Text 4, Ref 6	CO 2	Remember	Lecture	
30	P	12 Feb 2022	Stefan -Boltzmann law and Planck's law (qualitative), Deduction of Wien's law				Lecture	
30	E	7 Feb 2022	Stefan -Boltzmann law andPlanck's law (qualitative), Deduction of Wien's law	Text 4, Ref 6	CO 2	Remember	Lecture	
31	P	14 Feb 2022	and Rayleigh Jeans law from Planck's law, WaveParticle dualism				Lecture	

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
31	E	8 Feb 2022	and Rayleigh Jeans law from Planck's law, WaveParticle dualism	Text 4, Ref 6	CO 2	Remember	Lecture	
32	P	14 Feb 2022	de-Broglie hypothesis, de-Broglie wavelength				Lecture	
32	E	18 Feb 2022	de-Broglie hypothesis, de-Broglie wavelength	Text 4, Ref 6	CO 2	Understand	Lecture	
33	P	15 Feb 2022	Heisenberg's uncertainty principle and its physical significance, Application of uncertainty principle (Non-existence of electron in the nucleus)				Lecture	
33	E	21 Feb 2022	Heisenberg's uncertainty principle and itsphysical significance, Application of uncertainty principle (Non-existence of electron in the nucleus)	Text 4, Ref 6	CO 2	Remember	Lecture	
34	P	16 Feb 2022	Wave function- Properties, Physical significance				Lecture	
34	E	22 Feb 2022	Wavefunction- Properties, Physical significance	Text 4, Ref 6	CO 2	Remember	Lecture	
35	P	17 Feb 2022	Probability density, Normalization				Lecture	
35	E	23 Feb 2022	Probability density, Normalization	Text 4, Ref 6	CO 2	Remember	Lecture	
36	P	18 Feb 2022	Eigenvalues and Eigenfunctions				Lecture	
36	E	24 Feb 2022	Eigenvalues andEigenfunctions	Text 4, Ref 6	CO 2	Remember	Lecture	
37	P	19 Feb 2022	Time independent Schrödinger wave equation				Lecture	
37	E	25 Feb 2022	Time independent Schrödinger wave equation	Text 4, Ref 6	CO 2	Remember	Lecture	
38	P	21 Feb 2022	Particle in a box- Energy Eigenvalues and probability densities				Lecture	
38	E	26 Feb 2022	Particle in a box- Energy Eigenvalues andprobability densities	Text 4, Ref 6	CO 2	Remember	Lecture	
39	P	22 Feb 2022	Self-study Component: Wave-Particle dualism				Lecture	
39	E	28 Feb 2022	Self-study Component: Wave-Particle dualism	Text 4, Ref 6	CO 2	Remember	Lecture	
40	P	23 Feb 2022	de-Broglie hypothesis				Lecture	
40	E	28 Feb 2022	de-Broglie hypothesis	Text 4, Ref 6	CO 2	Remember	Lecture	
41	P	24 Feb 2022	de- Broglie wavelength				Lecture	
41	E	7 Mar 2022	de- Brogliewavelength	Text 4, Ref 6	CO 2	Remember	Lecture	
42	P	25 Feb 2022	Numerical problems		CO 2	Understand	Lecture	

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
42	E	7 Mar 2022	Numerical problems	Text 4, Ref 6	CO 2	Remember	Lecture	
72	P	28 Apr 2022	Introduction to blackbody radiation spectrum- Wien's law, Deduction of Wien's law, Application of uncertainty principle (Non-existence of electron in the nucleus)	Text 1	CO 2	Remember	Lecture	
72	E	28 Apr 2022	Introduction to blackbody radiation spectrum- Wien's law, Deduction of Wien's law, Application of uncertainty principle (Non-existence of electron in the nucleus)	Text 1	CO 2	Remember	Lecture	
Module 3								
1	P	27 Dec 2021	Lasers: Interaction of radiation with matter, Einstein's coefficients (derivation of expression for energy density)				Lecture	
1	E	27 Dec 2021	Lasers: Interaction of radiation with matter, Principle	Ref 2, Ref 3	CO 3	Remember	Lecture	
2	P	27 Dec 2021	Requisites of a Laser system, Conditions for Laser action				Lecture	
2	E	28 Dec 2021	Einstein's coefficients (derivation of expression for energydensity)	Ref 2, Ref 3	CO 3	Remember	Lecture	
3	P	28 Dec 2021	Principle, Construction				Lecture	
3	E	29 Dec 2021	Requisites of a Laser system, Conditions for Laser action	Ref 2, Ref 3	CO 3	Remember	Lecture	
4	P	29 Dec 2021	and working of CO2 and semiconductor Lasers, Application of Lasers in Defence (Laser range finder) and medical applications- Eye surgery and skin treatment				Lecture	
4	E	30 Dec 2021	and workingof CO2 and semiconductor Lasers, Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment	Ref 2, Ref 3	CO 3	Remember	Lecture	
5	P	30 Dec 2021	Optical Fibers: Propagation mechanism, angle of acceptance				Lecture	

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
5	E	31 Dec 2021	Principle, Construction, Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment	Ref 2	CO 3	Remember	Lecture	
6	P	31 Dec 2021	Numerical aperture, Modes of propagation				Lecture	
6	E	3 Jan 2022	and workingof CO2 and semiconductor Lasers, Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment, Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment	Ref 2, Ref 3	CO 3	Remember	Lecture	
7	P	1 Jan 2022	Types of optical fibers, Attenuation				Lecture	
7	E	3 Jan 2022	Optical Fibers: Propagation mechanism	Ref 2, Ref 3	CO 3	Remember	Lecture	Revision
8	P	3 Jan 2022	and Mention of expression for attenuation coefficient				Lecture	
8	E	4 Jan 2022	Optical Fibers: Propagation mechanism, angle of acceptance	Ref 2, Ref 3	CO 3	Remember	Lecture	
9	P	3 Jan 2022	Discussion of a block diagram of point-to-point communication				Lecture	
9	E	6 Jan 2022	Modes of propagation, Types of optical fibers	Ref 2, Ref 3	CO 3	Remember	Lecture	
10	P	4 Jan 2022	Optical fiber sensors- Intensity-based displacement sensor and Temperature sensor based on phase modulation				Lecture	
10	E	7 Jan 2022	Modes of propagation, Types of optical fibers, Attenuation	Ref 2, Ref 3	CO 3	Remember	Lecture	
11	P	5 Jan 2022	Merits				Lecture	
11	E	10 Jan 2022	and Mention of expression for attenuation coefficient, Discussion of ablock diagram of point-to-point communication, Optical fiber sensors- Intensity-based displacementsensor and Temperature sensor based on phase modulation	Ref 2, Ref 3	CO 3	Remember	Lecture	
12	P	6 Jan 2022	and demerits				Lecture	
12	E	11 Jan 2022	Merits, and demerits, Optical fiber sensors- Intensity-based displacementsensor and Temperature sensor based on phase modulation	Ref 2, Ref 3	CO 3	Remember	Lecture	

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
13	P	7 Jan 2022	Numerical problems				Lecture	
13	E	12 Jan 2022	Numerical problems, Optical fiber sensors- Intensity-based displacementsensor and Temperature sensor based on phase modulation	Ref 2, Ref 3	CO 3	Remember	Lecture	
14	P	8 Jan 2022	Self-study Component: Properties of Laser and comparison with ordinary source				Lecture	
14	E	13 Jan 2022	Self-study Component: Properties of Laser and comparison with ordinary source	Ref 2, Ref 3	CO 3	Understand	Lecture	
73	P	29 Apr 2022	Einstein's coefficients (derivation of expression for energydensity), Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment, and workingof CO2 and semiconductor Lasers	Text 3	CO 3	Remember	Lecture	Revision
73	E	29 Apr 2022	Einstein's coefficients (derivation of expression for energydensity), Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment, and workingof CO2 and semiconductor Lasers	Text 3	CO 3	Remember	Lecture	Revision
74	P	30 Apr 2022	Optical fiber sensors- Intensity-based displacementsensor and Temperature sensor based on phase modulation, Discussion of ablock diagram of point-to-point communication	Text 3	CO 3	Remember	Lecture	Revision
74	E	30 Apr 2022	Optical fiber sensors- Intensity-based displacementsensor and Temperature sensor based on phase modulation, Discussion of ablock diagram of point-to-point communication	Text 3	CO 3	Remember	Lecture	Revision
75	P	4 May 2022	Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment, and workingof CO2 and semiconductor Lasers	Text 3	CO 3	Remember	Lecture	Revision

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
75	E	4 May 2022	Application of Lasers in Defence (Laser range finder) and medicalapplications- Eye surgery and skin treatment, and workingof CO2 and semiconductor Lasers	Text 3	CO 3	Remember	Lecture	Revision
Module 4								
43	P	28 Feb 2022	Physics of Semiconductors: Fermi level in intrinsic semiconductors, Expression for the concentration ofelectrons in the conduction band		CO 4	Understand	Lecture	
43	E	8 Mar 2022	Classical free electron theory: Free-electron concept, Drude- Lorentz theory & Assumptions	Text 4	CO 4	Understand	Lecture	
44	P	1 Mar 2022	Classical free electron theory: Free-electron concept, Drude- Lorentz theory & Assumptions, Driftvelocity		CO 4	Understand	Lecture	
44	E	9 Mar 2022	Driftvelocity, Mean collision time, Mean free path & Relaxation time (only expression)	Text 4	CO 4	Understand	Lecture	
45	P	7 Mar 2022	Mean collision time, Mean free path & Relaxation time (only expression), Expression for electrical conductivity (no derivation)				Lecture	
45	E	11 Mar 2022	Mean collision time, Mean free path & Relaxation time (only expression), Expression for electricalconductivity (no derivation)	Text 4	CO 4	Remember	Lecture	
46	P	8 Mar 2022	Failures of classical free-electron theory, Quantum free electron theory: Assumptions				Lecture	
46	E	14 Mar 2022	Failures of classical free-electron theory, Quantum free electron theory: Assumptions, Expression for electricalconductivity (no derivation)	Text 4	CO 4	Understand	Lecture	
47	P	9 Mar 2022	Density of states (no derivation), Fermi-energy				Lecture	
47	E	16 Mar 2022	Density of states (no derivation), Fermi-energy, Fermifactor & its temperature dependence	Text 4	CO 4	Remember	Lecture	

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
48	P	10 Mar 2022	Fermi factor & its temperature dependence, Fermi - Dirac Statistics	Text 4	CO 4	Remember	Lecture	
48	E	17 Mar 2022	Fermifactor & its temperature dependence, Fermi - Dirac Statistics					
49	P	11 Mar 2022	Expression for electrical conductivity(derivation), Merits of Quantum free electron theory	Text 4	CO 4	Remember	Lecture	
49	E	21 Mar 2022	Expression for electricalconductivity(derivation), Merits of Quantum free electron theory					
50	P	14 Mar 2022	Holes concentration in valance band (only mention the expression), Conductivity of semiconductors (derivation)	Text 4	CO 4	Remember	Lecture	
50	E	21 Mar 2022	Holes concentration in valance band (only mention the expression), Conductivity of semiconductors (derivation)					
51	P	15 Mar 2022	Dielectrics: Electric dipole, Dipole moment	Text 4	CO 4	Remember	Lecture	
51	E	22 Mar 2022	Dielectrics: Electric dipole, Dipole moment					
52	P	16 Mar 2022	Polarization of dielectric materials, Types of polarization	Text 4	CO 4	Remember	Lecture	
52	E	24 Mar 2022	Polarization of dielectric materials, Types of polarization					
53	P	17 Mar 2022	Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field), Claussius-Mossotti equation (derivation)	Text 4	CO 4	Remember	Lecture	
53	E	24 Mar 2022	Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field), Claussius-Mossotti equation (derivation)					
54	P	18 Mar 2022	Numerical problems,Self-study Component: Drift velocity	Text 4	CO 4	Remember	Lecture	
54	E	25 Mar 2022	Claussius-Mossotti equation (derivation)					
55	P	19 Mar 2022	Mean collision time, Mean free path & Relaxation time				Lecture	

Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
55	E	26 Mar 2022	Numerical problems	Text 4	CO 4	Remember	Lecture	
56	P	21 Mar 2022	Hall effect, Expression for Hall coefficient(derivation)		CO 4	Understand	Lecture	
56	E	28 Mar 2022	Numerical problems	Text 4	CO 4	Remember	Lecture	
76	P	4 May 2022	Classical free electron theory: Free-electron concept, Failures of classical free-electron theory, Quantum free electron theory: Assumptions, Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field)	Text 4	CO 4	Remember	Lecture	Revision
76	E	4 May 2022	Classical free electron theory: Free-electron concept, Failures of classical free-electron theory, Quantum free electron theory: Assumptions, Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field)	Text 4	CO 4	Remember	Lecture	Revision
77	P	5 May 2022	Expression for Hall coefficient(derivation), Polarization of dielectric materials	Text 6	CO 4	Remember	Lecture	Revision
77	E	5 May 2022	Expression for Hall coefficient(derivation), Polarization of dielectric materials	Text 6	CO 4	Remember	Lecture	Revision
78	P	6 May 2022	Quantum free electron theory: Assumptions, Expression for the concentration ofelectrons in the conduction band, Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field)	Text 5	CO 4	Remember	Lecture	Revision
78	E	6 May 2022	Quantum free electron theory: Assumptions, Expression for the concentration ofelectrons in the conduction band, Qualitative treatment of Internal field in solids for one dimensional infinite array of dipoles (Lorentz field)	Text 5	CO 4	Remember	Lecture	Revision

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
Module 5								
57	P	22 Mar 2022	crystal size determination by Scherrer equation		CO 5	Understand	Lecture	
57	E	29 Mar 2022	Introduction to materials: Nanomaterials and nanocomposites, Principle	Text 6, Ref 7	CO 5	Remember	Lecture	
58	P	23 Mar 2022	Introduction to materials: Nanomaterials and nanocomposites				Lecture	
58	E	30 Mar 2022	construction and working of Xray Diffractometer	Text 6, Ref 7	CO 5	Remember	Lecture	
59	P	24 Mar 2022	Introduction to materials: Nanomaterials and nanocomposites				Lecture	
59	E	31 Mar 2022	crystal size determination by Scherrer equation	Text 6, Ref 7	CO 5	Remember	Lecture	
60	P	25 Mar 2022	Principle				Lecture	
60	E	1 Apr 2022	Principle, construction, workingand applications of Atomic Force Microscopy (AFM)	Text 6, Ref 7	CO 5	Understand	Lecture	
61	P	28 Mar 2022	Principle				Lecture	
61	E	4 Apr 2022	Xray Photoelectron Spectroscopy(XPS)	Text 6, Ref 7	CO 5	Remember	Lecture	
62	P	29 Mar 2022	construction				Lecture	
62	E	5 Apr 2022	Scanning Electron Microscopy (SEM)	Text 6, Ref 7	CO 5	Remember	Lecture	
63	P	30 Mar 2022	working and applications of Atomic Force Microscopy (AFM)				Lecture	
63	E	6 Apr 2022	Transmission ElectronMicroscopy (TEM)	Text 6, Ref 7	CO 5	Remember	Lecture	
64	P	31 Mar 2022	Fourier Transform Infrared Spectroscopy(FTIR)				Lecture	
64	E	31 Mar 2022	Fourier Transform Infrared Spectroscopy(FTIR)	Text 1, Text 2, Text 3, Text 4, Text 5, Text 6, Ref 1, Ref 2, Ref 3, Ref 4, Ref 5, Ref 6, Ref 7	CO 5	Understand	Lecture	
65	P	1 Apr 2022	Xray Photoelectron Spectroscopy(XPS)				Lecture	

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
65	E	1 Apr 2022	Xray Photoelectron Spectroscopy(XPS)	Text 1, Text 2, Text 3, Text 4, Text 5, Text 6, Ref 1, Ref 2, Ref 3, Ref 4, Ref 5, Ref 6, Ref 7	CO 5	Understand	Lecture	
66	P	4 Apr 2022	Transmission Electron Microscopy (TEM)				Lecture	
66	E	4 Apr 2022	Transmission ElectronMicroscopy (TEM)	Text 1, Text 2, Text 3, Text 4, Text 5, Text 6, Ref 1, Ref 2, Ref 3, Ref 4, Ref 5, Ref 6, Ref 7	CO 5	Understand	Lecture	
67	P	5 Apr 2022	Self-study Component: X-ray diffractometer				Lecture	
67	E	5 Apr 2022	Self-study Component: X-ray diffractometer	Text 1, Text 2, Text 3, Text 4, Text 5, Text 6, Ref 1, Ref 2, Ref 3, Ref 4, Ref 5, Ref 6, Ref 7	CO 5	Understand	Lecture	
68	P	7 Apr 2022	construction and working of Xray Diffractometer		CO 5	Understand	Lecture	
68	E	7 Apr 2022	construction and working of Xray Diffractometer	Text 1, Text 2, Text 3, Text 4, Text 5, Text 6, Ref 1, Ref 2, Ref 3, Ref 4, Ref 5, Ref 6, Ref 7	CO 5	Understand	Lecture	
69	P	8 Apr 2022	Scanning Electron Microscopy (SEM)		CO 5	Understand	Lecture	
69	E	8 Apr 2022	Scanning Electron Microscopy (SEM)	Ref 7	CO 5	Understand	Lecture	

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Period	Plan/ Execution	Date	Topic	Source material to be referred	Course Outcome	Bloom's Level	Execution Methods	Learning Validation Method
70	P	13 Apr 2022	Scanning tunneling electron microscopy(STEM)		CO 5	Understand	Lecture	
70	E	13 Apr 2022	Scanning tunneling electron microscopy(STEM)		CO 5	Understand	Lecture	
79	P	9 May 2022	Introduction to materials: Nanomaterials and nanocomposites, construction and working of Xray Diffractometer, workingand applications of Atomic Force Microscopy (AFM)	Ref 7	CO 5	Remember	Lecture	Revision
79	E	9 May 2022	Introduction to materials: Nanomaterials and nanocomposites, construction and working of Xray Diffractometer, workingand applications of Atomic Force Microscopy (AFM)	Ref 7	CO 5	Remember	Lecture	Revision

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6 . Course Information

6 . 3 Other Assessment

ASSIGNMENT : 1

Semester:1-CBCS 2021

Subject : ENGINEERING PHYSICS (21PHY12)

Faculty : Vinutha

Max Marks: 10

Answer All Questions					
Q.No			**Max Marks**	**CO**	**BT/ CL**
1		Starting from Planck's quantum theory of radiation arrive at Wein's law and Rayleigh Jean law.	3	2	L1
2		Set up SCHRODINGER TIME INDEPENDENT EQUATION	3	2	L1

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3		Solve SCHRODINGER TIME INDEPENDENT EQUATION	4	2	L1

Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1	Q2	Q3	IA Total	BT/CL
4BP21CS001	Abdul Afreed	P	3	3	4	10	Remember
4BP21CS003	Ahammed Nihad T H	P	3	3	4	10	Remember
4BP21CS004	Althaf Hussain I A	P	3	3	4	10	Remember
4BP21CS005	Amna Kausar Rafiq	P	3	3	4	10	Remember
4BP21CS006	Ayesha Bi Suhana	P	3	3	4	10	Remember
4BP21CS007	Ayshath Farhana	P	3	3	4	10	Remember
4BP21CS009	Ayshathul Fahiza	P	3	3	4	10	Remember
4BP21CS011	Fathima Afeefa	P	3	3	4	10	Remember
4BP21CS012	Fathima Rashida N K	P	3	3	4	10	Remember
4BP21CS014	Geetha P S	P	3	3	4	10	Remember
4BP21CS015	Hafsa Taj Qureshi	P	3	3	4	10	Remember
4BP21CS016	Ishamuddin Afreed	P	3	3	4	10	Remember
4BP21CS017	Maashitha M R	P	3	3	4	10	Remember
4BP21CS018	Madeeha Ruman	P	3	3	4	10	Remember
4BP21CS020	Mahammad Mufeez	P	3	3	4	10	Remember
4BP21CS021	Mahammad Zahir	P	3	3	4	10	Remember
4BP21CS022	Mahammadmujeeb Bagawan	P	3	3	4	10	Remember
4BP21CS023	Mahammed Shafan	P	3	3	4	10	Remember
4BP21CS024	Manohar Kumar	P	3	3	4	10	Remember
4BP21CS025	M D Shoaib Hussain	P	3	3	4	10	Remember
4BP21CS026	Mohamed Saad	P	3	3	4	10	Remember
4BP21CS027	Mohammad Affan	P	3	3	4	10	Remember

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Bearys Institute of Technology

Department of Basic Science (Science)

L1

USN	Name	Present (P) / Absent (Ab)	Q1	Q2	Q3	IA Total	BT/CL
4BP21CS028	Mohammad Razi	P	3	3	4	10	Remember
4BP21CS030	Mohammad Usman Ghani Yasir	P	3	3	4	10	Remember
4BP21CS033	Mohammed Imbran	P	3	3	4	10	Remember
4BP21CS034	Mohammed Nihal Sheikh	P	3	3	4	10	Remember
4BP21CS036	Mohammed Shahlam P V	P	3	3	4	10	Remember
4BP21CS037	Mohammed Shamlan	P	3	3	4	10	Remember
4BP21CS040	Muhammed Radin	P	3	3	4	10	Remember
4BP21CS053	Suma	P	3	3	4	10	Remember
4BP21CS061	Zainab Manal A	P	3	3	4	10	Remember
4BP21CV001	Abdul Khader Mohammed Zidan	P	3	3	4	10	Remember
4BP21CV002	Abdul Marsook K A	P	3	3	4	10	Remember
4BP21CV006	Fathimath Rafsa	P	3	3	4	10	Remember
4BP21CV008	Manjula Halakatti	P	3	3	4	10	Remember
4BP21CV009	Mohammed Abdulla	Ab	0	0	0	0	No Level
4BP21CV010	Muhammad Ishath	P	3	3	4	10	Remember
4BP21CV012	Shabana Rajesab Vatarad	P	3	3	4	10	Remember
4BP21ME002	Hayyan Akhtar Abdul Qadir	P	3	3	4	10	Remember
4BP21ME003	Ismail Mashool	P	3	3	4	10	Remember
4BP21ME004	Mahammad Muzammil A	P	3	3	4	10	Remember
4BP21ME006	Mahin Sahal C S	P	3	3	4	10	Remember
4BP21ME013	Sayyad Rameez K R	P	3	3	4	10	Remember

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ASSIGNMENT : 2

Semester:1-CBCS 2021

Subject : ENGINEERING PHYSICS (21PHY12)

Max Marks: 10

Faculty : Vinutha

Answer All Questions

Q.No			Max Marks	CO	BT/ CL
1		Define S HM using usincharacteristics of S HM.Derive the differential equation for S HM using HOOKS LAW.	3	1	L1
2		Derive the expression for equivalent force constant for two springs in series and parallel .Mention the expressin for period of oscillation.	3	1	L1

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3		What are Damped Oscillations? Give the theory of Damped Oscillations.	4	1	L2

Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1	Q2	Q3	IA Total	BT/CL
4BP21CS001	Abdul Afreed	P	3	3	4	10	Understand
4BP21CS003	Ahammed Nihad T H	P	3	3	4	10	Understand
4BP21CS004	Althaf Hussain I A	P	3	3	4	10	Understand
4BP21CS005	Amna Kausar Rafiq	P	3	3	4	10	Understand
4BP21CS006	Ayesha Bi Suhana	P	3	3	4	10	Understand
4BP21CS007	Ayshath Farhana	P	3	3	4	10	Understand
4BP21CS009	Ayshathul Fahiza	P	3	3	4	10	Understand
4BP21CS011	Fathima Afeefa	P	3	3	4	10	Understand
4BP21CS012	Fathima Rashida N K	P	3	3	4	10	Understand
4BP21CS014	Geetha P S	P	3	3	4	10	Understand
4BP21CS015	Hafsa Taj Qureshi	P	3	3	4	10	Understand
4BP21CS016	Ishamuddin Afreed	P	3	3	4	10	Understand
4BP21CS017	Maashitha M R	P	3	3	4	10	Understand
4BP21CS018	Madeeha Ruman	P	3	3	4	10	Understand
4BP21CS020	Mahammad Mufeez	P	3	3	4	10	Understand
4BP21CS021	Mahammad Zahir	P	3	3	4	10	Understand
4BP21CS022	Mahammadmujeeb Bagawan	P	3	3	4	10	Understand
4BP21CS023	Mahammed Shafan	P	3	3	4	10	Understand
4BP21CS024	Manohar Kumar	P	3	3	4	10	Understand
4BP21CS025	M D Shoaib Hussain	P	3	3	4	10	Understand
4BP21CS026	Mohamed Saad	P	3	3	4	10	Understand
4BP21CS027	Mohammad Affan	P	3	3	4	10	Understand

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USN	Name	Present (P) / Absent (Ab)	Q1	Q2	Q3	IA Total	BT/CL
4BP21CS028	Mohammad Razi	P	3	3	4	10	Understand
4BP21CS030	Mohammad Usman Ghani Yasir	P	3	3	4	10	Understand
4BP21CS033	Mohammed Imbran	P	3	3	4	10	Understand
4BP21CS034	Mohammed Nihal Sheikh	P	3	3	4	10	Understand
4BP21CS036	Mohammed Shahlam P V	P	3	3	4	10	Understand
4BP21CS037	Mohammed Shamlan	P	3	3	4	10	Understand
4BP21CS040	Muhammed Radin	P	3	3	4	10	Understand
4BP21CS053	Suma	P	3	3	4	10	Understand
4BP21CS061	Zainab Manal A	P	3	3	4	10	Understand
4BP21CV001	Abdul Khader Mohammed Zidan	P	3	3	4	10	Understand
4BP21CV002	Abdul Marsook K A	P	3	3	4	10	Understand
4BP21CV006	Fathimath Rafsa	P	3	3	4	10	Understand
4BP21CV008	Manjula Halakatti	P	3	3	4	10	Understand
4BP21CV009	Mohammed Abdulla	Ab	0	0	0	0	No Level
4BP21CV010	Muhammad Ishath	P	3	3	4	10	Understand
4BP21CV012	Shabana Rajesab Vatarad	P	3	3	4	10	Understand
4BP21ME002	Hayyan Akhtar Abdul Qadir	P	3	3	4	10	Understand
4BP21ME003	Ismail Mashool	P	3	3	4	10	Understand
4BP21ME004	Mahammad Muzammil A	P	3	3	4	10	Understand
4BP21ME006	Mahin Sahal C S	P	3	3	4	10	Understand
4BP21ME013	Sayyad Rameez K R	P	3	3	4	10	Understand

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6 . 4 Internal Assessment

Internal : 1

Semester:1-CBCS 2021

Subject : ENGINEERING PHYSICS (21PHY12)

Faculty : Vinutha

Date : 24/01/2022

Time : 14:30 - 16:00

Max Marks: 50

Answer Any 3 Questions

Q.No			Max Marks	CO	BT/ CL
1a		Derive the expression for energy density in terms of Einstein's coefficients	10	3	L2
1b		Define Simple Harmonic Motion. Give the characteristics of SHM. Derive the equation of motion for SHM	10	1	L2
		OR			

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2a		What is attenuation in an optical fiber? Explain different attenuation mechanisms.	6	3	L2
2b		Give the construction and working of semiconductor diode laser with suitable diagram.	10	3	L2
2c		The average output power of laser source emitting a laser beam of wavelength 6328 Å is 5mW. Find the number of photons emitted per second by laser	4	3	L3

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	With the neat diagram, derive the expression for numerical aperture in an optical fiber	10	3	L2
	Derive the expression for equivalent force constant for 2 springs in parallel	6	1	L2
	Find the attenuation in an optical fiber of length 500meter, when light signal of power 100mW emerges out of the fiber with a power 90mW	4	3	L2

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4a		Explain different types of optical fiber with suitable diagrams	6	3	L5
4b		Explain construction and working of carbondioxide laser	10	3	L2
4c		A mass of 5kg is suspended from the free end of a spring. When set for vertical oscillations, the system executes 100 oscillations in 40 seconds. Calculate the force constants of the spring	4	1	L3

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5		Derive the theory for Forced oscillation and hence derive the expression for Amplitude of vibration	10	1	L2
		OR			
6		Derive the theory of damped oscillation	10	1	L2

Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1		Q2			Q3			Q4			Q5	Q6	IA Total	BT/CL
			a	b	a	b	c	a	b	c	a	b	c				
4BP21CS001	Abdul Afreed	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS003	Ahammed Nihad T H	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS004	Althaf Hussain I A	P	0	10	0	0	0	10	0	0	0	0	0	0	4	24	Understand
4BP21CS005	Amna Kausar Rafiq	P	7	10	0	0	0	8	6	3	0	0	0	0	8	42	Understand
4BP21CS006	Ayesha Bi Suhana	P	10	10	0	0	0	10	0	4	0	10	0	0	8	42	Understand
4BP21CS007	Ayshath Farhana	P	10	10	0	0	0	10	0	3	0	0	0	0	8	41	Understand
4BP21CS009	Ayshathul Fahiza	P	10	10	0	0	0	10	6	4	0	0	0	0	10	50	Understand
4BP21CS011	Fathima Afeefa	P	10	10	0	0	0	10	6	3	0	0	0	0	0	46	Understand
4BP21CS012	Fathima Rashida N K	P	10	10	0	0	0	10	6	4	0	0	0	0	0	50	Understand

USN	Name	Present (P) / Absent (Ab)	Q1		Q2			Q3			Q4			Q5	Q6	IA Total	BT/CL
			a	b	a	b	c	a	b	c	a	b	c				
4BP21CS014	Geetha P S	P	9	10	0	0	0	5	0	0	0	0	0	0	7	31	Understand
4BP21CS015	Hafsa Taj Qureshi	P	10	10	0	0	0	10	6	4	0	0	0	0	0	40	Understand
4BP21CS016	Ishamuddin Afreed	P	6	9	0	0	0	0	0	0	0	7	0	0	8	30	Understand
4BP21CS017	Maashitha M R	P	6	6	0	0	0	4	4	4	0	0	0	0	0	24	Understand
4BP21CS018	Madeeha Ruman	P	5	1	0	0	0	0	0	0	0	10	0	0	4	20	Understand
4BP21CS020	Mahammad Mufeez	P	10	10	0	0	0	0	0	0	4	10	0	0	8	42	Understand
4BP21CS021	Mahammad Zahir	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS022	Mahammadmujeeb Bagawan	P	10	10	0	0	0	10	0	0	0	0	0	0	10	40	Understand
4BP21CS023	Mahammed Shafan	P	10	10	0	0	0	8	0	0	0	0	0	0	7	35	Understand
4BP21CS024	Manohar Kumar	P	10	10	0	0	0	0	0	0	6	0	4	0	10	40	Apply
4BP21CS025	M D Shoaib Hussain	P	10	9	0	0	0	5	2	0	0	0	0	0	0	26	Understand
4BP21CS026	Mohamed Saad	P	8	5	0	0	0	10	5	0	0	3	0	0	0	28	Understand
4BP21CS027	Mohammad Affan	P	7	10	0	0	0	10	0	4	0	0	0	0	9	40	Understand
4BP21CS028	Mohammad Razi	P	4	10	0	0	0	8	4	1	0	0	0	0	3	30	Understand
4BP21CS030	Mohammad Usman Ghani Yasir	P	10	10	0	0	0	10	4	4	0	0	0	0	10	48	Understand
4BP21CS033	Mohammed Imbran	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS034	Mohammed Nihal Sheikh	P	10	10	0	0	0	10	6	0	0	0	0	0	5	41	Understand
4BP21CS036	Mohammed Shahlam P V	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS037	Mohammed Shamlan	P	8	9	0	0	0	10	0	0	0	0	0	0	4	31	Understand
4BP21CS040	Muhammed Radin	P	10	10	0	0	0	0	0	0	0	10	0	0	8	38	Understand
4BP21CS053	Suma	P	8	10	0	0	0	10	0	4	0	0	0	0	10	42	Understand
4BP21CS061	Zainab Manal A	P	10	10	0	0	0	0	0	0	6	0	0	0	0	26	Understand
4BP21CV001	Abdul Khader Mohammed Zidan	P	3	10	0	0	0	10	5	0	0	0	0	0	5	33	Understand
4BP21CV002	Abdul Marsook K A	P	10	8	0	0	0	10	0	0	0	0	0	0	5	33	Understand
4BP21CV006	Fathimath Rafsa	P	4	8	0	0	0	0	4	0	0	6	0	0	5	23	Understand
4BP21CV008	Manjula Halakatti	P	9	9	0	0	0	10	0	0	0	0	0	0	10	38	Understand
4BP21CV009	Mohammed Abdulla	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV010	Muhammad Ishath	P	10	5	0	0	0	0	0	0	0	10	0	0	0	25	Understand
4BP21CV012	Shabana Rajesab Vatarad	P	10	8	0	0	0	10	4	0	0	0	0	0	10	42	Understand
4BP21ME002	Hayyan Akhtar Abdul Qadir	P	10	10	0	0	0	10	0	4	0	0	0	0	0	34	Understand
4BP21ME003	Ismail Mashool	P	10	10	0	0	0	10	0	4	0	0	0	0	10	44	Understand
4BP21ME004	Mahammad Muzammil A	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level

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Bearys Institute of Technology

Department of Basic Science (Science)

USN	Name	Present (P) / Absent (Ab)	Q1		Q2			Q3			Q4			Q5	Q6	IA Total	BT/CL
			a	b	a	b	c	a	b	c	a	b	c				
P21ME006	Mahin Sahal C S	P	10	7	0	0	0	0	0	0	0	0	0	0	4	21	Understand
BP21ME013	Sayyad Rameez K R	P	10	4	0	0	0	10	0	4	0	0	0	0	0	28	Understand

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Scheme of Evaluation

Bearys Institute of Technology

BEARYS INSTITUTE OF TECHNOLOGY
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I" IA QUESTION PAPER SCHEME (2021-22)

Class : 1st Semester
Subject : Engineering physics
Subject code : 21PHY12

Max. Marks 50
Date : 25.01.22
Duration : 90 min

Question number		Explanation	Mark split up	Total marks
1	a	Writing - three (any) - Induced absorption Spontaneous emission Stimulated emission	05	10
		Rate of absorption : Rate of spontaneous emission / Rate of stimulated emission		
		Arriving upto $U_\nu = \frac{A}{B\left(e^{\frac{h\nu}{kT}}-1\right)}$	05	
	b	Definition of SHM	2	10
		Writing Tow characteristics of SHM	01	
		Deriving differential eqn $F = -kx$		
		$\frac{md^2x}{dt^2} = -kx$	1M	
		Arriving at $\frac{d^2x}{dt^2} + \omega^2 x = 0$		
		Solution $x = A\sin\omega t$	01	

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Ist IA QUESTION PAPER SCHEME (2021-22)

Question number		Explanation	Mark split up	Total marks	
2	a	Definition Explanation of four diffrent attenuation	02 04	6	20
	b	Diagram Construction Writing working of Semiconductor laser	02 01 01	10	
	c	Writing formula $\Delta E = h\nu = \frac{hc}{\lambda\nu}$ Substitution $\Delta E = \frac{6.63\times10^{-34}\times3\times10^{8}}{6328\times10^{-10}} = 3.14\times10^{-19}$ J $N\times\Delta E = 5mW = 5\times10^{-3}$ J/s $N = \frac{5\times10^{-3}}{3.143\times10^{-19}} = 1.59\times10^{16}$ Number of Photons emitted per second = 1.59×10^{16}	01 01 01 01	4	

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I[st] IA QUESTION PAPER SCHEME (2021-22)

Question number		Explanation		rk. it	Total marks
3	a	Diagram	02	10	20
		Writing Hill $\cos\theta_1 = \frac{n_2}{n_1}$	02		
		Arriving Hill $\sin\theta_0 = \frac{\sqrt{n_1^2 - n_2^2}}{n_0}$	04		
		$N.A = \sqrt{n_1^2 - n_2^2}$	02		
	b	Diagram	01	6	
		Writing two points ⇒ extension experienced by-1& -two springs are same			
		But force experienced by two spring is different	01		
		$F = F_1 + F_2$ $\quad x_1 = x_2 = x$			
		$-k_p x_p = -k_1 x_1 - k_2 x_2$			
		$-k_p x_p = -k_1 x - k_2 x$			
		$k_p = k_1 + k_2$	01		
	c	Writing the formula $\alpha = -\frac{10}{L}\log_{10}\left(\frac{P_{out}}{P_{in}}\right)$		01	
		Substitution $\alpha = -\frac{10}{0.5}\log_{10}\left(\frac{90}{100}\right)$	01	02	
		Writing Result with SI Unit $= 0.915\ dB/km$		01	

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I[st] IA QUESTION PAPER SCHEME (2021-22)

Question number		Explanation	Mark wise up	Total marks
4	a	1) Step-index single-mode fibre → Explanation with diagram	02	10
		2) Step-index multi mode fibre → Explanation with diagram	02	
		3) Graded-index multimode fibre → Explanation with diagram	02	
	b	Diagram	02	
		Derivation Construction	04	
		Working working	04	
	c	working formula $T = 2\pi\sqrt{\frac{m}{k}}$	01	04
		calculating $T = 0.5$ second		
		Substitution $k = \frac{4\pi^2 m}{T^2} = 4\pi^2 \times \frac{5}{(0.5)^2}$	02	
		Final result with S.I unit	01	

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I[st] IA QUESTION PAPER SCHEME (2021-22)

Question number		Explanation	Mark split up	Total marks
5	a	$F_{net} = F_{restoring} + F_{resisting} + F_{damping}$	01	10
		Arriving upto $\frac{d^2x}{dt^2} + 2b\frac{dx}{dt} + \omega^2 x = f_0 \sin pt$	04	
		solution $\Rightarrow x = A\sin(pt - \phi)$		
		writing in terms of $A = \frac{f_0}{\sqrt{(\omega^2 - p^2)^2 + 4b^2p^2}}$	04	
		$A = \frac{1}{\sqrt{(\omega^2 - p^2)^2 + 4b^2p^2}}$	01	
		OR		
6	a	Arriving at $x[D^2 + 2bD + \omega^2] = 0$	03	10
		general solution $x = Ce^{(-b+\sqrt{b^2-\omega^2})t} + De^{(-b-\sqrt{b^2-\omega^2})t}$	01	
		writing in terms of $C = \frac{x_0}{2}\left[1 + \frac{b}{\sqrt{b^2-\omega^2}}\right]$	02	
		$D = \frac{x_0}{2}\left[1 - \frac{b}{\sqrt{b^2-\omega^2}}\right]$	02	
		Substituting C & D in eqn $x = \frac{x_0}{2}\left\{\left[1 + \frac{b}{\sqrt{b^2-\omega^2}}\right] e^{(-b+\sqrt{b^2-\omega^2})t} + \left[1 - \frac{b}{\sqrt{b^2-\omega^2}}\right] e^{(-b-\sqrt{b^2-\omega^2})t}\right\}$	01	

Internal : 2

Semester:1-CBCS 2021

Subject : ENGINEERING PHYSICS (21PHY12)

Faculty : Vinutha

Date : 02/03/2022

Time : 14:30 - 16:00

Max Marks: 50

Answer Any 3 Questions

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Q.No			Max Marks	CO	BT/ CL
1a		State and explain Heisenberg's Uncertainty Principle. Show that the electrons does not exist inside the nucleus..	8	2	L1
1b		What are assumptions of Drude -Lorentz model. What are the failures of it.	8	4	L1
1c		A particle having mass of 0.5MeV/c2 has a kinetic energy of 100 eV. Calculate the deBroglie wavelength, where c is the velocity of light.	4	2	L2
		OR			

2a		Solve Schrodinger Time Independent equation for a particle in one dimensional potential well,	10	2	a
2b		Discuss the spectral distribution energy of black body radiation spectrum and explain Wien's displacement law	5	2	L1
2c		An electron is bound in a one dimensional potential well of width 1 A0 but of infinite wall height. Find its energy values in the ground state, and also in the first two excited states.	5	2	L3

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2	L2				
3a		State Wein's law and Rayleigh-Jeans law and mention their draw backs.	8	2	L2
3b		What are quantum mechanical assumptions or modifications to CFT of metals? Explain the success of QFT.	8	4	L2
3c		Calculate the probability of an electron occupying an energy level 0.02eV,above the fermi levelat 200k in a material.	4	4	L3
		OR			

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4a		Set up Schrodinger Time Independent Equation for a particle in one dimensional Potential well.	10	2	
4b		What is fermi factor ? Explain variation of fermi factor with temperature.	10	4	L2
5		Starting from Planck's quantum theory of radiation arrive at Wein's law and Rayleigh-Jean's law.	10	2	L2
		OR			

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6		A quantum particle confined to one dimensional box of width 'a' is in its first excited state. What is the probability of finding the particle over an interval of 'a/2' marked symmetrically at the center of the box	10	2	L3

Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1			Q2			Q3			Q4		Q5	Q6	IA Total	BT/CL
			a	b	c	a	b	c	a	b	c	a	b				
4BP21CS001	Abdul Afeed	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS003	Ahammed Nihad T H	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS004	Althaf Hussain I A	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS005	Amna Kausar Rafiq	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS006	Ayesha Bi Suhana	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS007	Ayshath Farhana	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS009	Ayshathul Fahiza	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS011	Fathima Afeefa	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS012	Fathima Rashida N K	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS014	Geetha P S	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS015	Hafsa Taj Qureshi	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS016	Ishamuddin Afreed	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS017	Maashitha M R	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS018	Madeeha Ruman	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS020	Mahammad Mufeez	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS021	Mahammad Zahir	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS022	Mahammadmujeeb Bagawan	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS023	Mahammed Shafan	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS024	Manohar Kumar	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS025	M D Shoaib Hussain	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level

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Bearys Institute of Technology

Department of Basic Science (Science)

Scheme of Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1			Q2			Q3			Q4		Q5	Q6	IA Total	BTL
			a	b	c	a	b	c	a	b	c	a	b				
4BP21CS026	Mohamed Saad	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS027	Mohammad Affan	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS028	Mohammad Razi	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS030	Mohammad Usman Ghani Yasir	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS033	Mohammed Imbran	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS034	Mohammed Nihal Sheikh	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS036	Mohammed Shahlam P V	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS037	Mohammed Shamlan	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS040	Muhammed Radin	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS053	Suma	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS061	Zainab Manal A	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV001	Abdul Khader Mohammed Zidan	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV002	Abdul Marsook K A	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV006	Fathimath Rafsa	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV008	Manjula Halakatti	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV009	Mohammed Abdulla	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV010	Muhammad Ishath	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CV012	Shabana Rajesab Vatarad	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21ME002	Hayyan Akhtar Abdul Qadir	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21ME003	Ismail Mashool	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21ME004	Mahammad Muzammil A	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21ME006	Mahin Sahal C S	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21ME013	Sayyad Rameez K R	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level

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BT/CL

2 Scheme of Evaluation

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II nd IA QUESTION PAPER SCHEME (2022)

: Engineering physics
code : 21PHY12

Max. Marks: 50
Duration : 90 min

	Explanation	Mark split up		Total marks
	Heisenberg's uncertainty principle with expression	4		
	To show that the electrons does not exist inside the nucleus	4	8	
	~~three~~ four Assumptions	8		= 20
b			8	
c	Data $m = 0.5\,MeV/c^2 = \frac{0.5\times10^{6}\times1.6\times10^{-19}}{(3\times10^{8})^2} = 8.1\times10^{-30}\,kg$	2	10	

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II nd IA QUESTION PAPER SCHEME (2022)

$$\lambda = \frac{h}{\sqrt{2mE}} = 1.24 \times 10^{-10}\ m$$

Question number		Explanation	Marks split
	a	Solve schrodeingur Time Independent equation eqn $d^2\varphi/dx^2 + 8\pi^2 m(E-V)\varphi = 0$ gen. sol :- $\varphi = C\cos\frac{h^2}{8\pi^2 mE}kx + D\sin kx$ and $\varphi = D\sin\frac{n\pi}{a}x$ . .	5
		To find D from $\int_0^a \lvert\psi\rvert^2 dx = 1$ $D = \sqrt{2/a}$	5
2	b	Distribution of black body radiation spectrum	5

Bearys Institute of Technology
Department of Basic Science (Science)

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II nd IA QUESTION PAPER SCHEME (2022)

c	Data = a = 1Å = 1×10^{-10} m $E_n = \frac{n^2 h^2}{8ma^2}$	2	10
	$E_1 = 6.0314 \times 10^{-18}$ J $E_2 = 2.4125 \times 10^{-17}$ J $E_3 = 5.4282 \times 10^{-17}$ J	3	

tion ber	Explanation	Mark split up	Total marks
	Veen's law $u_\lambda d\lambda = c_1 e^{-c_2/\lambda T} d\lambda$ and its draw backs	4	
a	Rayleigh Jean law $u_\lambda d\lambda = 8\pi \lambda^{-4} d\lambda$	8	20
	draw backs of Rayleigh Jean law	4	
b	Assumption of QFT and modification in CFT	8	8

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II nd IA QUESTION PAPER SCHEME (2022)

	c	Data: $E - E_F = 0.02eV = 0.02 \times 1.6 \times 10^{-19}$ J Eqn: $F(E) = \frac{1}{e^{\frac{E-E_F}{KT}} + 1} = 0.24$ at 200K

Question number		Explanation	M
4	a	Set up schrodinger time independent equation $\varphi = Ae^{-i(\omega t - kx)}$ write $\frac{1}{\lambda^2} = -\frac{1}{4\pi^2\varphi} \cdot \frac{d^2\varphi}{dx^2}$ $K.E = p^2/2m$ and hence total energy $E = K.E + V$ then finally $\frac{d^2\varphi}{dx^2} + 8\pi^2 m/h^2 (E-V)\varphi = 0$	01 01 01
	b	Definition of Fermi factor with expression $F(E) = \frac{1}{e^{E-E_F/KT} + 1}$ at $E < E_F$ $F(E) = 1$ at $T = 0K$ $E > E_F$ $F(E) = 0$ at $T = 0K$ at ordinary temp $F(E) = 1/2$	01 2 2 2

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explanation — mark split up — 1

starting from Planck's law

$u_\lambda d\lambda = \frac{8\pi hc}{\lambda^5}\left[\frac{1}{e^{hc/\lambda kT}-1}\right]d\lambda$ — 05

Rayleigh at shorter WL Wein's law

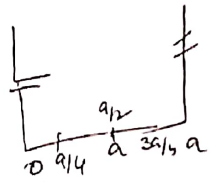
from $u_\lambda d\lambda = C_1 e^{-C_2/\lambda T}\, d\lambda$ — 10

For longer wavelength

$u_\lambda d\lambda = 8\pi \lambda^{-4} kT\, d\lambda$ — 05

this is Rayleigh Jean law — 20

a) soln: $\psi_n = \sqrt{2/a}\sin\left(\frac{n\pi}{a}\right)x$.



03

10

$P = \int_{a/4}^{3a/4} \varphi^2 dx$

07

$P = \int_{a/4}^{3a/4} \left(\frac{2}{a}\right)\left[\sin^2\left(\frac{n\pi}{a}\right)x\right] dx$

$P = 0.5$

Internal : 3

Semester:1-CBCS 2021

Subject : ENGINEERING PHYSICS (21PHY12)

Faculty : Vinutha

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Date: 2023.08.22 12:43:01 +05'30'

Date : 11/04/2022

Time : 10:00 - 11:30

Max Marks: 50

Q.No			Max Marks	CO	
1a		what is Hall Effect .Obtain the expression for Hall Coefficient.	10	4	L1
1b		With the neat diagram, explain the Principle ,construction and working of Atomic Force Microscope.	10	5	L2
		OR			
2a		With the neat diagram, explain the Principle ,construction and working of X-Ray diffractometer.	10	5	L2

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2b		Derive Clausious Mussotti Equation.	6	4	L2
2c		Using Bragg's spectrometer,the glancing angle for the first order spectrum was observed to be equal to 60°.Find wavelenght of X-rays if d=2.82 Å	4	4	L2
3a		Define nanomaterial and classify the nanomaterials based on the dimensional constraints.	10	5	L2

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3b		Describe in brief various types of polarization mechanisms.	10	4	4c
		OR			
4a		With the neat diagram , explain the principle ,construction and working of X-Ray Photo Electron Microscopy.	10	5	L2
4b		Explain in brief how crystal size is determined by Scherrer's equation.	6	5	L3

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4c		what are dielectrics ? what are the different types of dielectrics	4	4	L2
5		With the neat diagram , explain the principle ,construction and working of Transmission Electron Microscope .	10	5	L1
		OR			
6		With the neat diagram , explain the principle ,construction and working of Scanning Electron Microscope .	10	5	L1

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Evaluation

USN	Name	Present (P) / Absent (Ab)	Q1		Q2			Q3		Q4			Q5	Q6	IA Total	BTL
			a	b	a	b	c	a	b	a	b	c				
4BP21CS001	Abdul Afeed	P	10	10	0	0	0	0	0	0	0	0	10	0	30	Understand
4BP21CS003	Ahammed Nihad T H	P	10	10	0	0	0	0	0	10	6	4	0	0	40	Apply
4BP21CS004	Althaf Hussain I A	P	10	10	0	0	0	0	0	0	5	4	10	0	39	Apply
4BP21CS005	Amna Kausar Rafiq	P	10	4	0	6	0	0	10	6	6	4	10	0	40	Apply
4BP21CS006	Ayesha Bi Suhana	P	10	10	0	0	0	10	10	0	0	0	10	0	50	Understand
4BP21CS007	Ayshath Farhana	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS009	Ayshathul Fahiza	P	10	10	0	0	0	0	0	10	2	4	10	0	46	Understand
4BP21CS011	Fathima Afeefa	P	0	0	10	6	4	0	0	5	0	0	10	0	35	Understand
4BP21CS012	Fathima Rashida N K	P	10	10	0	0	0	10	10	0	0	0	10	0	50	Understand
4BP21CS014	Geetha P S	P	10	6	0	0	0	0	2	0	0	0	0	0	18	Understand
4BP21CS015	Hafsa Taj Qureshi	P	10	10	0	0	0	0	0	10	6	4	10	0	50	Apply
4BP21CS016	Ishamuddin Afreed	P	10	10	0	0	0	10	3	0	0	0	3	0	36	Understand
4BP21CS017	Maashitha M R	P	10	2	0	0	0	6	8	0	0	0	3	0	29	Understand
4BP21CS018	Madeeha Ruman	P	6	10	0	0	0	2	3	0	0	0	10	0	31	Understand
4BP21CS020	Mahammad Mufeez	P	10	10	0	0	0	10	10	0	0	0	10	0	50	Understand
4BP21CS021	Mahammad Zahir	P	8	10	0	0	0	0	0	4	0	4	0	0	26	Understand
4BP21CS022	Mahammadmujeeb Bagawan	P	10	10	0	0	0	10	7	0	0	0	10	0	47	Understand
4BP21CS023	Mahammed Shafan	P	10	10	0	0	0	8	2	0	0	0	10	0	40	Understand
4BP21CS024	Manohar Kumar	P	10	10	0	0	0	8	10	0	0	0	10	0	48	Understand
4BP21CS025	M D Shoaib Hussain	P	10	10	0	0	0	0	0	2	0	4	5	0	31	Understand
4BP21CS026	Mohamed Saad	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
4BP21CS027	Mohammad Affan	P	10	10	0	0	0	10	0	0	0	0	10	0	40	Understand
4BP21CS028	Mohammad Razi	P	10	10	0	0	0	10	0	0	0	0	10	0	40	Understand
4BP21CS030	Mohammad Usman Ghani Yasir	P	0	0	10	6	4	10	10	0	0	0	0	10	50	Understand
4BP21CS033	Mohammed Imbran	P	10	8	0	0	0	10	6	0	0	0	0	0	34	Understand
4BP21CS034	Mohammed Nihal Sheikh	P	10	2	0	0	0	10	8	0	0	0	0	0	30	Understand
4BP21CS036	Mohammed Shahlam P V	P	0	0	10	6	4	10	6	0	0	0	0	0	36	Understand
4BP21CS037	Mohammed Shamlan	P	10	10	0	0	0	10	3	0	0	0	3	0	36	Understand
4BP21CS040	Muhammed Radin	P	10	10	0	0	0	0	0	10	6	4	10	0	50	Apply
4BP21CS053	Suma	P	10	10	0	0	0	0	0	10	6	4	10	0	50	Apply
4BP21CS061	Zainab Manal A	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level

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Bearys Institute of Technology

Department of Basic Science (Science)

USN	Name	Present (P) / Absent (Ab)	Q1		Q2			Q3		Q4			Q5	Q6	IA Total	BT/CL
			a	b	a	b	c	a	b	a	b	c				
3P21CV001	Abdul Khader Mohammed Zidan	P	10	10	0	0	0	10	0	0	0	0	10	0	40	Understand
3P21CV002	Abdul Marsook K A	P	10	3	0	0	0	10	0	0	0	0	0	0	23	Understand
3P21CV006	Fathimath Rafsa	P	10	10	0	0	0	0	0	10	0	0	3	0	33	Understand
BP21CV008	Manjula Halakatti	P	10	8	0	0	0	10	10	0	0	0	10	0	48	Understand
BP21CV009	Mohammed Abdulla	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level
BP21CV010	Muhammad Ishath	P	10	10	0	0	0	0	0	0	0	4	10	0	34	Understand
4BP21CV012	Shabana Rajesab Vatarad	P	10	10	0	0	0	6	2	0	0	0	10	0	38	Understand
4BP21ME002	Hayyan Akhtar Abdul Qadir	P	10	10	0	0	0	0	0	0	0	0	0	0	20	Understand
4BP21ME003	Ismail Mashool	P	0	0	10	6	4	8	6	0	0	0	8	0	42	Understand
4BP21ME004	Mahammad Muzammil A	P	10	10	0	0	0	10	10	0	0	0	10	0	50	Understand
4BP21ME006	Mahin Sahal C S	P	10	0	0	0	0	10	0	0	0	0	6	0	26	Understand
4BP21ME013	Sayyad Rameez K R	Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	No Level

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2 Scheme of Evaluation

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III[rd] IA QUESTION PAPER SCHEME (2020-21)

Dr. Venuta I.L

g.Physics
le : 21PHY12

Max. Marks: 50

Duration : 90 min

Explanation	Mark split up		Total marks
Hall effect Phenomenon	2		
$F_L = E_H$	3		
$v = \frac{I}{\rho w d}$	3	10	
then $\rho = \frac{BI}{V_H w}$	2		
Atomic Force Microscope Principle construction, Diagram	5		30
working of Atomic Force Microscope	5	10	

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IIIrd IA QUESTION PAPER SCHEME (2020-21)

Question number	Explanation	
	Principle of XPS and diagram Construction and working of XPS	
a		
b	Clausius Mussotti Equation dipole moment / unit vol = $N\alpha_e E$; $P = \varepsilon_0(\varepsilon_r - 1)E$ Lorentz field $E = \frac{P}{\varepsilon_0}$ Hence $\frac{\varepsilon_r - 1}{\varepsilon_r + 2} = \frac{N\alpha_e}{3\varepsilon_0}$	2 1 2 5
c	Data: glancing angle $\theta = 6°$ ID $= 2.82\,A^\circ$ $n = 1$ $2d \sin\theta = n\lambda$ Ans; 0.5895×10^{-10} m	1 3

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Definition of nanomaterials	2	
3D, 2D, 1D ~~0D~~ diagram graph for 1D, 2D, 3D with explanation	8	10
Different Polarization, ① Electronic Polarization with diagram	4	
② Ionic Polarization with diagram	3	10
③ orientation Polarization with diagram	3	

Explanation	Mark split up	
Principle, diagram and construction of X-ray diffracto meter	5	10
Working of X-Ray diffractometer	5	

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III[rd] IA QUESTION PAPER SCHEME (2020-21)

				20
	Scherrer Equation determination the experimental explanation		3	
b	Formula for scherrer Equation and			6
	explain the terms of scherrer Equation		3	

tion ber	Explanation	Mark split up	Total marks
	Dielectrics definition with examples	2	
c	Types of dielectrics, Polar dielectrics and non Polardiele	4	

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III[rd] IA QUESTION PAPER SCHEME (2020-21)

5		Principle, diagram, construction of Travelling electron microscope Working of Travelling Electron microscope
6		Principle, diagram, Construction of Scanning Electron Microscope Working of Scanning Electron Microscope

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HOD

Principal

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NearMangaloreUniversity,LandsEnd,InnoliMangaluru,Karnataka-574153

MODERATION FORMS (CIE-1)

Section1:

CourseName	**Engineering Physics**
CourseCode	**21PHY12**
Course Instructor	**Dr. Vinutha P R**
ModuleCoordinator	**Dr. Vinutha P R**

Section2:

Question paper format(Module coordinator to put TickMark) TitleSection:

Title/CourseCode/CourseName	√
Date/Time/Semester/Faculty	√
MarksAllocation	√
ClearInstructions	√

Section3:Blooms taxonomy and marks allotted(To be filled by Course Instructor)

Q.No	CO	Marks	Cognitivedomain					
			Remember	Understand	Apply	Analyse	Evalaute	Create
1a)	CO3	10		√				
1b)	CO1	10		√				
2a)	CO3	06		√				
2b)	CO3	10		√				
2c)	CO3	04			√			
3a)	CO3	10		√				
3b)	CO1	06		√				
3c)	CO3	04		√				
4a)	CO3	06	√					
4b)	CO3	10		√				
4c)	CO1	04	√					
5a)	CO1	10		√				
6a)	CO1	10		√				

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Section4:

This is to inform you the Question Paper was rejected on the following grounds (ModuleCoordinator)

Section5:ApprovalAuthorities

Signature and Name of Module Coordinator with Date	Signature and Name of HOD with Date
24/8/22	* Dr. Anjum khan 24/8/22

Section6:ExaminationCell

College Exam Coordinators Name andSignature	Received on

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MODERATION FORMS (CIE-2)

Section1:

CourseName	Engineering Physics
CourseCode	21PHY12
Course Instructor	Dr. Vinutha P R
ModuleCoordinator	Dr. Vinutha P R

Section2:

Question paper format(Module coordinator to put TickMark) TitleSection:

Title/CourseCode/CourseName	√
Date/Time/Semester/Faculty	√
MarksAllocation	√
ClearInstructions	√

Section3:Blooms taxonomy and marks allotted(To be filled by Course Instructor)

Q.No	CO	Marks	Cognitivedomain					
			Remember	Understand	Apply	Analyse	Evalaute	Create
1a)	CO2	08	√					
1b)	CO4	08	√					
1c)	CO2	04		√				
2a)	CO2	10		√				
2b)	CO2	05	√					
2c)	CO2	05			√			
3a)	CO2	08		√				
3b)	CO4	08		√				
3c)	CO4	04			√			
4a)	CO2	10		√				
4b)	CO4	10		√				
5a)	CO2	10		√				
6a)	CO2	10			√			

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Section4:

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Section5:ApprovalAuthorities

Signature and Name of Module Coordinator with Date	Signature and Name of HOD with Date
1/3/23	Dr. Anjum Khan 1/3/23

Section6:ExaminationCell

College Exam Coordinators Name andSignature	Received on

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MODERATION FORMS (CIE-3)

Section1:

CourseName	Engineering Physics
CourseCode	21PHY12
Course Instructor	Dr. Vinutha P R
ModuleCoordinator	Dr. Vinutha P R

Section2:

Question paper format(Module coordinator to put TickMark) TitleSection:

Title/CourseCode/CourseName	√
Date/Time/Semester/Faculty	√
MarksAllocation	√
ClearInstructions	√

Section3:Blooms taxonomy and marks allotted(To be filled by Course Instructor)

Q.No	CO	Marks	Cognitivedomain					
			Remember	Understand	Apply	Analyse	Evalaute	Create
1a)	CO4	10	√					
1b)	CO5	10		√				
2a)	CO5	10		√				
2b)	CO4	06		√				
2c)	CO4	04		√				
3a)	CO5	10		√				
3b)	CO4	10		√				
4a)	CO5	10		√				
4b)	CO5	06			√			
4c)	CO4	04		√				
5a)	CO5	10	√					
6a)	CO5	10	√					

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Section4:

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Section5:ApprovalAuthorities

Signature and Name of Module Coordinator with Date	Signature and Name of HOD with Date
16/8/22	Dr. Anjum Khan 19/8/22

Section6:ExaminationCell

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BEARYS INSTITUTE OF TECHNOLOGY

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Mangaluru, Karnataka-574153

Department of PHYSICS

Staff Name: Dr. Vinutha P R
Course Name: Engineering Physics

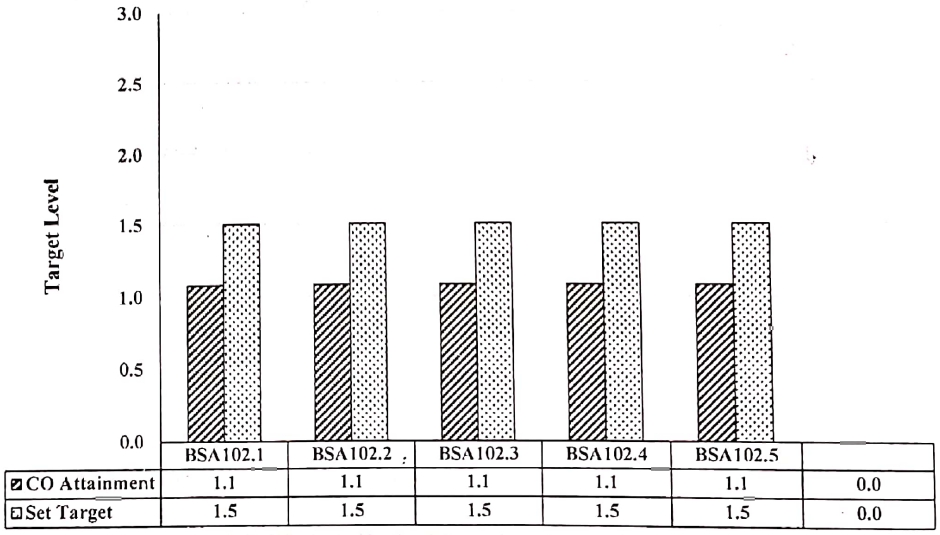
NBA Code : BSA102 Class: A SECTION 1ST SEM Class Strength: 43

0

Final CO Attainment

COs	Assigned Target Level	Internal Direct Attainment	SEE Direct Attainment	Overall Direct Attainment	Indirect Attainment	Final Attainment	Remarks
BSA102.1	1.5	0.6	0.0	0.6	3.0	1.1	
BSA102.2	1.5	0.6		0.6	3.0	1.1	
BSA102.3	1.5	0.6		0.6	3.0	1.1	
BSA102.4	1.5	0.6		0.6	3.0	1.1	
BSA102.5	1.5	0.6		0.6	3.0	1.1	

CO Attainment Chart



Remarks by Faculty Member

Dr. Vinutha P R

Course Coordinator

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Mangaluru, Karnataka-574153

REFERENCE AND TEXTBOOKS

	TEXT BOOKS		REFERENCE BOOKS
TB1.	A Text book of Engineering Physics- M.N. Avadhanulu and P.G. Kshirsagar, 10th revised Ed, S. Chand. & Company Ltd, New Delhi.	RB1.	Introduction to Mechanics — M.K. Verma: 2nd Ed, University Press(India) Pvt Ltd, Hyderabad 2009.
TB2.	An Introduction to Lasers theory and applications by M.N.Avadhanulu and P.S.Hemne revised Edition 2012 . S. Chand and company Ltd -New Delhi.	RB2.	Lasers and Non Linear Optics – B.B. Laud, 3rd Ed, New Age International Publishers 2011.
TB3.	Engineering Physics-Gaur and Gupta-Dhanpat Rai Publications-2017.	RB3.	LASERS Principles, Types and Applications by K.R. Nambiar-New Age International Publishers.
TB4.	Concepts of Modern Physics-Arthur Beiser: 6th Ed;Tata McGraw Hill Edu Pvt Ltd- New Delhi 2006.	RB4.	Solid State Physics-S O Pillai, 8th Ed- New Age International Publishers-2018.
TB5.	X-ray diffraction- B E Warren published by Courier Corporation.	RB5.	Shock waves made simple- Chintoo S Kumar, K Takayama and KPJ Reddy: Willey India Pvt. Ltd. New Delhi2014.
TB6.	Nano Composite Materials-Synthesis, Properties and Applications, J. Parameswaranpillai,, N.Hameed, T.Kurian, Y. Yu, CRC Press.	RB6.	Materials Characterization Techniques-Sam Zhang, Lin Li, Ashok Kumar, CRC Press, First Edition, 2008.
TB7.	Fundamentals of Fibre Optics in Telecommunication & Sensor Systems, B.P. Pal, New Age International Publishers.	RB7	Characterization of Materials- Mitra P.K . Prentice Hall India Learning Private Limited.
		RB8	Nanoscience and Nanotechnology: Fundamentals to Frontiers – M.S.Ramachandra Rao & Shubra Singh, Wiley India Pvt Ltd

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Near Mangalore University, Lands End, Innoli

Mangaluru, Karnataka-574153

Bearys Institute of Technology MANGALORE

Department of PHYSICS

STUDENT FEEDBACK ON COURSE OUTCOMES

Faculty Name:	**Dr. Vinutha P R**				
Course Title:	**ENGINEERING PHYSICS**				
Course Code:	**21PHY12**	**NBA Course Code:**		**BSA102**	
Academic Year:	**2021 - 22**	**Sem & Section:**	**I**	**No. of Students:**	**43**

CO1	Understand various types of oscillations and their implications ,the role of Shock waves in various fields.
CO2	COMPUTE EIGEN VALUES ,EIGEN FUNCTIONS AND THE MOMENTUM OF ATOMIC AND SUB ATOMIC PARTICALS USIND 1-D SCHRODINGER'S WAVE EQUATION.
CO3	Apprehend the basics of Laser & Optical fibers with different types and their applications in Various fields.
CO4	UNDERSTAND ELECTRICAL CONDUCTIVITY IN SOLID MATERIALS
CO5	UNDERSTAND THE VARIOUS MEASUREMENT TECHNIQUES.

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Institute of Technology

BEARYS INSTITUTE OF TECHNOLOGY, MANGALORE
Department of Basic Science (PHYSICS)

Course Outcome Feedback- 2021-22 (ODD Semester)

Rate by ticking the Course outcome in scale of 1-5
(5-More Relevant, 4-Relevant, 3-Neutral, 2- Less Relevant, 1-Not Relevant)

Course Code/Name:		21PHY21/22 / Engineering Physics
CO No.	Bloom's Level	CO Description
CO 1	CL2	Understand various types of oscillations and their implications ,the role of Shock waves in various fields.
CO 2	CL2	Compute Eigen Values ,Eigen Functions and the momentum of atomic and sub atomic particals usind 1-D Schrodinger's Wave Equation.
CO 3	CL3	Apprehend thebasics of Laser & Optical fibers with different types and their applications in Various fields.
CO 4	CL2	Understand electrical conductivity in solid materials
CO5	CL2	Understand the various measurement techniques.

Sl.No.	USN	Name	CO 1	CO 2	CO 3	CO 4	CO 5	Student Sign	Remarks
1	4BP21CS001	Abdul Afreed	5	5	5	5	5		
2	4BP21CS003	AhammedNihad T H	5	5	5	5	5		
3	4BP21CS004	AlthafHussain I A	5	5	5	5	5		
4	4BP21CS005	AmnaKausarRafiq	5	5	5	5	5		
5	4BP21CS006	Ayesha Bi Suhana	5	5	5	5	5		
6	4BP21CS007	AyshathFarhana	5	5	5	5	5		
7	4BP21CS009	AyshathulFahiza	5	5	5	5	5		
8	4BP21CS011	FathimaAfeefa	4	4	4	4	4		
9	4BP21CS012	FathimaRashida N K	5	5	5	5	5		
10	4BP21CS014	Geetha P S	4	4	4	4	4		
11	4BP21CS015	HafsaTaj Qureshi	5	5	5	5	5		
12	4BP21CS016	IshamuddinAfreed	5	5	5	5	5		
13	4BP21CS017	Maashitha M R	5	5	5	5	5		
14	4BP21CS018	MadeehaRuman	4	4	4	4	4		

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15	4BP21CS020	MahammadMufeez	5	5	5	5	5	
16	4BP21CS021	MahammadZahir						
17	4BP21CS022	MahammadmujeebBagawan	5	5	5	5	5	
18	4BP21CS023	MahammedShafan	4	4	5	5	4	
19	4BP21CS024	Manohar Kumar	5	5	5	5	5	
20	4BP21CS025	M D ShoaibHussain	5	5	5	5	5	
21	4BP21CS026	Mohamed Saad	4	5	5	4	5	
22	4BP21CS027	Mohammad Affan	5	5	5	5	5	
23	4BP21CS028	Mohammad Razi	5	5	5	5	5	
24	4BP21CS030	Mohammad Usman GhaniYasir	5	5	5	5	5	
25	4BP21CS033	Mohammed Imbran						
26	4BP21CS034	Mohammed Nihal Sheikh	5	5	5	5	5	
27	4BP21CS036	Mohammed Shahlam P V	4	5	5	5	5	
28	4BP21CS037	Mohammed Shamlan	5	5	5	5	5	
29	4BP21CS040	MuhammedRadin	5	5	5	5	5	
30	4BP21CS053	Suma	5	5	5	5	5	
31	4BP21CS061	ZainabManal A	5	5	5	5	5	
32	4BP21CV001	Abdul Khader Mohammed Zidan	5	4	5	5	5	
33	4BP21CV002	Abdul Marsook K A	5	5	5	5	5	
34	4BP21CV006	FathimathRafsa	4	5	4	5	4	
35	4BP21CV008	ManjulaHalakatti	4	5	5	5	4	
36	4BP21CV009	Mohammed Abdulla						
37	4BP21CV010	Muhammad Ishath	5	5	5	5	5	
38	4BP21CV012	ShabanaRajesabVatarad	4	5	4	5	5	
39	4BP21ME002	Hayyan Akhtar Abdul Qadir	5	5	5	5	4	
40	4BP21ME003	Ismail Mashool	4	5	5	5	5	
41	4BP21ME004	MahammadMuzammil A	5	5	5	5	5	
42	4BP21ME006	MahinSahal C S	5	5	5	5	5	
43	4BP21ME013	SayyadRameez K R	4	4	5	5	5	

ToT $\frac{}{\text{No St} \times 5} \times 100$ 93% 96% 85% 97% 95%

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RESULT ANALYSIS

ENGINEERING PHYSICS 21PHY12 (2021-22)

S N	STUDENT NAME	USN	Int 40	EX 60	Tot 100
1	ABDUL AFREED	4BP21CS001	28	5	33
2	AHAMMED NIHAD T H	4BP21CS003	30	14	44
3	ALTHAF HUSSAIN I A	4BP21CS004	33	18	51
4	AMNA KAUSAR RAFIQ	4BP21CS005	42	22	64
5	AYESHA BI SUHANA	4BP21CS006	46	42	88
6	AYSHATH FARHANA	4BP21CS007	40	18	58
7	AYSHATHUL FAHIZA	4BP21CS009	49	38	87
8	FATHIMA AFEEFA	4BP21CS011	43	22	65
9	FATHIMA RASHIDA N K	4BP21CS012	50	47	97
10	GEETHA P S	4BP21CS014	35	25	60
11	HAFSA TAJ QURESHI	4BP21CS015	46	19	65
12	ISHAMUDDIN AFREED	4BP21CS016	41	19	60
13	M D SHOAIB HUSSAIN	4BP21CS025	34	20	54
14	MAASHITHA M R	4BP21CS017	34	11	45
15	MADEEHA RUMAN	4BP21CS018	37	18	55
16	MAHAMMAD MUFEEZ	4BP21CS020	46	30	76
17	MAHAMMAD ZAHIR	4BP21CS021	32	18	50
18	MAHAMMADMUJEEB BAGAWAN	4BP21CS022	47	19	66
19	MAHAMMED SHAFAN	4BP21CS023	40	18	58
20	MANOHAR KUMAR	4BP21CS024	46	36	82
21	MOHAMED SAAD	4BP21CS026	36	12	48
22	MOHAMMAD AFFAN	4BP21CS027	40	19	59

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23	MOHAMMAD RAZI	4BP21CS028	38	18	56
24	MOHAMMAD USMAN GHANI YASIR	4BP21CS030	48	37	85
25	MOHAMMED IMBRAN	4BP21CS033	31	1	32
26	MOHAMMED NIHAL SHEIKH	4BP21CS034	41	27	68
27	MOHAMMED SHAHLAM P V	4BP21CS036	33	20	53
28	MOHAMMED SHAMLAN	4BP21CS037	34	22	56
29	MUHAMMED RADIN	4BP21CS040	41	23	64
30	SUMA	4BP21CS053	46	32	78
31	ZAINAB MANAL A	4BP21CS061	37	18	55
32	ABDUL KHADER MOHAMMED ZIDAN	4BP21CV001	47	18	65
33	ABDUL MARSOOK K A	4BP21CV002	37	8	45
34	FATHIMATH RAFSA	4BP21CV006	39	18	57
35	MANJULA HALAKATTI	4BP21CV008	41	18	59
36	MUHAMMAD ISHATH	4BP21CV010	33	6	39
37	SHABANA RAJESAB VATARAD	4BP21CV012	40	18	58
38	MAHIN SAHAL C S	4BP21ME006	32	24	56
39	HAYYAN AKHTAR ABDUL QADIR	4BP21ME002	40	31	71
40	ISMAIL MASHOOL	4BP21ME003	41	21	62
41	MAHAMMAD MUZAMMIL A	4BP21ME004	42	23	65
42	SAYYAD RAMEEZ K R	4BP21ME013	37	7	44

Total appeared	Total Passed	Failed	Absent	Pass %
42	12	8	0	80.95%

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Course Closure Report

Subject Code: 21PHY12 **Academic Year: 2021-22** **Faculty Name: Dr. Vinutha P R**

1. Observations from Course Instructors

Sl. No.	Course Outcomes	Target	Attainment	Gap	Action Proposed to bridge the Gap	Revision of target wherever achieved
1	21PHY12.1	1.5	1.1	0.4	More Classes & Revisions to be taken.	NA as target of 1.5 not achieved
2	21PHY12.2	1.5	1.1	0.4		
3	21PHY12.3	1.5	1.1	0.4		
4	21PHY12.4	1.5	1.1	0.4		
5	21PHY12.5	1.5	1.1	0.4		

2. Outcomes on Actions for CAYm1 Observations/Suggestions

Sl. No.	Action Taken	Change Observed
1.	One extra hour was included in the Time table for slow learners	Improvement in the results were observed

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3. **Comments/Suggestions by the Course Coordinator**

Sl. No.	Comment/Observations	Suggested Actions
1	Students should be very thorough Fundamentals	Required Aditional training should be taken for fundamentals

4. **Comments/Suggestions by the Module Coordinator**

Sl. No.	Comment/Observations	Suggested Actions
1	Lack of concentration among students	Group activity should be conducted on difficult topics with four members in a group

Faculty In-charge **Module Coordinator** **NAAC Coordinator** **H.O.D**

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