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English Medium  
PHYSICS**

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**All India Medical & Engineering Entrance Exam**

**NTA NEET/JEE MAIN/CUET**

**2023-24**

■ NEET/AIPMT ■ AIIMS ■ JEE Main ■ AMU ■ AP EAMCET (Medical) ■ AP EAMCET (Engg.)  
■ ASSAM CEE ■ BCECE ■ BITSAT ■ Chhattisgarh-PET ■ COMEDK ■ DCE ■ KVPY ■ NTSE ■ SCRA  
■ Gujarat Common Entrance Test (GUJCET) ■ Himachal Pradesh-CET ■ J & K-CET  
■ JCECE ■ Kerala-CEE ■ Karnataka-CET (KCET) ■ KVPY ■ MP -PET ■ MANIPAL  
■ JIPMER ■ MHT-CET ■ NTSE ■ Odisha-JEE ■ SCRA ■ SRM-JEE ■ TS EAMCET (Medical)  
■ TS EAMCET (Engg.) ■ UPCPMT ■ UPTU ■ UPSEE ■ UPSC NDA/NA ■ VITEEE ■ WEST BENGAL JEE

**PHYSICS-1**

**MECHANICS**

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**NCERT**

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**As per Revised  
Answer-key**

**Medical & Engineering Entrance Exam Solved Questions**



**Volume**



**All India Medical & Engineering Entrance Examination**

**NEET/JEE Main**

# **PHYSICS**

**Previous Years**

**Chapterwise Objective**

**Solved Papers**

**VOLUME-I**

**Useful for :** NEET/AIPMT, AIIMS, JEE (Main), AMU, AP EAMCET (Medical), AP EAMCET (Engg.), ASSAM CEE, BCECE, BITSAT, Chhattisgarh-PET, COMEDK, DCE, Gujarat Common Entrance Test (GUJCET), Himanchal Pradesh-CET, J & K CET, JCECE, KVPY, Kerala-CEE, Karnataka-CET(KCET), MP-PET, MANIPAL, JIPMER, MHT-CET, NTSE, Odisha-JEE, SRM-JEE, TS-EAMCET(Medical), TS-EAMCET (Engg.), UPCPMT, UPTU, UPSEE, UPSC NDA/NA/SCRA, VITEEE, WEST BENGAL JEE.

**Chief Editor**

**A.K. Mahajan**

**Compiled & Edited by**

**Er. Pradeep Kumar, Er. Rahul Prajapati, Er. Atal Bihari Sahani**

**Er. Rajeev Kumar, Er. Satyam Singh, Bhaskar Bind**

**Computer Graphics by**

**Balkrishna Tripathi, Charan Singh**

**Editorial Office**

**12, Church Lane Prayagraj-211002**

**☎ Mob. : 9415650134**

**Email : yctap12@gmail.com**

**website : www.yctbooks.com**

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# SYLLABUS

## NEET

### UNIT-I: Physical World and Measurement

Physics Scope and excitement, nature of physical laws Physics, technology and society.

Need for measurement Units of measurement, systems of units, SI units, fundamental and derived units.

Length, mass and time measurements, accuracy and precision of measuring instruments, errors in measurement, significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

### UNIT-II: Kinematics

Frame of reference, Motion in a straight line, Position-time graph, speed and velocity. Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity-time and position-time graphs, for uniformly accelerated motion (graphical treatment). Elementary concepts of differentiation and integration for describing motion. Scalar and vector quantities: Position and displacement vectors, general vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number, addition and subtraction of vectors. Relative velocity. Unit vectors. Resolution of a vector in a plane-rectangular components. Scalar and Vector products of Vectors. Motion in a plane. Cases of uniform velocity and uniform acceleration-projectile motion. Uniform circular motion.

### UNIT-III: Laws of Motion

Intuitive concept of force. Inertia, Newton's first law of motion momentum and Newton's second law of motion, impulse, Newton's third law of motion Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces. Static and Kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion. Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

### UNIT-IV: Work, Energy and Power

Work done by a constant force and variable force, kinetic energy, work-energy theorem, power Notion of potential energy, potential energy of a spring, conservative forces, conservation of mechanical energy (kinetic and potential energies), non-conservative forces, motion in a vertical circle, elastic and inelastic collisions in one and two dimensions

### UNIT-V: Motion of System of Particles and Rigid Body

Centre of mass of a two-particle system, momentum conservation and centre of mass motion Centre of mass of a rigid body, centre of mass of uniform rod. Moment of a force, torque, angular momentum, conservation of angular momentum with some examples. Equilibrium of rigid bodies, rigid body rotation and equation of rotational motion, comparison of linear and rotational motions, moment of inertia, radius of gyration, Values of MI for simple geometrical objects (no derivation). Statement of parallel and perpendicular axis theorems and their applications.

### UNIT-VI: Gravitation

Kepler's laws of planetary motion. The universal law of gravitation Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy, gravitational potential, Escape velocity, orbital velocity of a satellite. Geostationary satellites

### UNIT-VII: Properties of Bulk Matter

Elastic behavior, Stress-strain relationship. Hooke's law, Young's modulus, bulk modulus, shear, modulus of rigidity, poisson's ratio; elastic energy. Viscosity, Stokes' law, terminal velocity, Reynold's number, streamline and turbulent flow. Critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure, application of surface tension ideas to drops, bubbles and capillary rise. Heat, temperature, thermal expansion, thermal expansion of solids, liquids and gases. Anomalous expansion Specific heat capacity,  $C_p$ ,  $C_v$ , calorimetry, change of state-latent heat. Heat transfer- conduction and thermal conductivity, convection and radiation. Qualitative ideas of Black Body Radiation, Wein's displacement law and Green House effect. Newton's law of cooling and Stefan's law.

### UNIT-VIII: Thermodynamics

Thermal equilibrium and definition of temperature (zeroth law of Thermodynamics). Heat, work and internal energy. First law of thermodynamics Isothermal and adiabatic processes. Second law of the thermodynamics Reversible and irreversible processes. Heat engines and refrigerators.

### UNIT-IX: Behaviour of Perfect Gas and Kinetic Theory

Equation of state of a perfect gas, work done on compressing a gas. Kinetic theory of gases Assumptions, concept of pressure. Kinetic energy and temperature, degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gases concept of mean free path.

### UNIT-X: Oscillations and Waves

Periodic motion-period, frequency, displacement as a function of time, Periodic functions. Simple harmonic motion(SHM) and its equation, phase, oscillations of a spring-restoring force and force constant, energy in SHM-kinetic and potential energies, simple pendulum-derivation of expression for its time period, free, forced and damped oscillations (qualitative ideas only), resonance. Wave motion. Longitudinal and transverse waves, speed of wave motion. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics. Beats, Doppler effect

### UNIT-I: Electrostatics

Electric charges and their conservation. Coulomb's law-force between two point charges, forces between multiple charges, superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in a uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell field inside and outside)

Electric potential potential difference, electric potential due to a point charge, a dipole and system of charges, equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipoles in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor, Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor, Van de Graaff generator.

### UNIT-II: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity and mobility and their relation with electric current, Ohm's law, electrical resistance. V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors, series and parallel combinations of resistors, temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge. Potentiometer-principle and applications to measure potential difference, and for comparing emf of two cells, measurement of internal resistance of a cell

### UNIT-III: Magnetic Effects of Current and Magnetism

Concept of magnetic field, Oersted's experiment. Biot-Savart's law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids Force on a moving charge in uniform magnetic and electric fields, Cyclotron. Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere Torque experienced by a current loop in a magnetic field, moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter. Current loop as a magnetic dipole and its magnetic dipole moment.

Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis Torque on a magnetic dipole (bar magnet) in a uniform magnetic field, bar magnet as an equivalent solenoid, magnetic field lines Earth's magnetic field and magnetic elements. Para-, dia-and ferro-magnetic substances with examples. Electromagnetic and factors affecting their strengths. Permanent magnets.

### UNIT-IV: Electromagnetic Induction and Alternating Currents

Electromagnetic Induction Faraday's law, induced emf and current, Lenz's Law, Eddy currents. Self and mutual Inductance. Alternating currents, peak and rms value of alternating current/ voltage, reactance and impedance, LC oscillations (qualitative treatment only). LCR series circuit, resonance, power in AC circuits, wattless current, AC generator and transformer.

### UNIT-V: Electromagnetic Waves

Need for displacement current. Electromagnetic waves and their characteristics (qualitative ideas only).

Transverse nature of electromagnetic waves. Electromagnetic spectrum (radiowaves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays). Including elementary facts about their uses.

### UNIT-VI: Optics

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lens-maker's formula. Magnification, power of a lens, combination of thin lenses in contact combination of a lens and a mirror. Refraction and dispersion of light through a prism. Scattering of light-blue colour of the sky and reddish appearance of the sun at sunrise and sunset

Optical instruments Human eye, image formation and accommodation, correction of eye defects (myopia and hypermetropia) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. Wave optics: Wavefront and Huygens' principle, reflection and refraction of plane wave at a plane surface using wavefronts. Proof of laws of reflection and refraction using Huygens' principle. Interference, Young's double hole experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.

### UNIT-VII: Dual Nature of Matter and Radiation

Photoelectric effect, Hertz and Lenard's observations, Einstein's photoelectric equation-particle nature of light. Matter waves-wave nature of particles, de-Broglie relation. Davisson-Germer experiment (experimental details should be omitted, only conclusion should be explained)

### UNIT-VIII Atoms and Nuclei

Alpha-particle scattering experiments, Rutherford's model of atom, Bohr model energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars, isotones. Radioactivity  $\alpha$  and  $\beta$  particles/ rays and their properties decay law. Mass-energy relation mass defect, binding energy per nucleon and its variation with mass number nuclear fission and fusion.

## UNIT-IX: Electronic Devices

Energy bands in solids (qualitative ideas only), conductors, insulators and semiconductors, semiconductor diode-I-V characteristics in forward and reverse bias, diode as a rectifier,

I-V characteristics of LED, photodiode, solar cell and Zener diode, Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor, transistor as an amplifier (common emitter configuration) and oscillator Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

## JEE (Main)

### SECTION-A

#### UNIT 1 Physics and Measurement

Physics, technology and society, SI units, Fundamental and derived units. Least count, accuracy and precision of measuring instruments, Errors in measurement, Significant figures. Dimensions of Physical quantities, dimensional analysis and its applications.

#### UNIT 2 Kinematics

Frame of reference. Motion in a straight line: Position-time graph, speed and velocity. Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity-time, position time graphs, relations for uniformly accelerated motion. Scalars and Vectors, Vector addition and Subtraction, Zero Vector, Scalar and Vector products, Unit Vector, Resolution of a Vector. Relative Velocity, Motion in a plane, Projectile Motion, Uniform Circular Motion.

#### UNIT 3 Laws of Motion

Force and Inertia, Newton's First Law of motion; Momentum, Newton's Second Law of motion; Impulse; Newton's Third Law of motion. Law of conservation of linear momentum and its applications, Equilibrium of concurrent forces. Static and Kinetic friction, laws of friction, rolling friction.

Dynamics of uniform circular motion: Centripetal force and its applications.

#### UNIT 4 Work, Energy and Power

Work done by a constant force and a variable force; kinetic and potential energies, work-energy theorem, power. Potential energy of a spring, conservation of mechanical energy, conservative and non-conservative forces; Elastic and inelastic collisions in one and two dimensions.

#### UNIT 5 Rotational Motion

Centre of mass of a two-particle system, Centre of mass of a rigid body; Basic concepts of rotational motion; moment of a force, torque, angular momentum, conservation of angular momentum and its applications; moment of inertia, radius of gyration. Values of moments of inertia for simple geometrical objects, parallel and perpendicular axis theorems and their applications. Rigid body rotation, equations of rotational motion.

#### UNIT 6 Gravitation

The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth.

Kepler's laws of planetary motion. Gravitational potential energy; gravitational potential. Escape velocity. Orbital velocity of a satellite. Geo-stationary satellites.

#### UNIT 7 Properties of Solids & Liquids

Elastic behaviour, Stress-strain relationship, Hooke's.

Law, Young's modulus, bulk modulus, modulus of rigidity. Pressure due to a fluid column; Pascal's law and its applications. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, Reynolds number. Bernoulli's principle and its applications. Surface energy and surface tension, angle of contact, application of surface tension - drops, bubbles and capillary rise. Heat, temperature, thermal expansion; specific heat capacity, calorimetry; change of state, latent heat. Heat transfer-conduction, convection and radiation, Newton's law of cooling.

#### UNIT 8 Thermodynamics

Thermal equilibrium, zeroth law of thermodynamics, concept of temperature. Heat, work and internal energy. First law of thermodynamics. Second law of thermodynamics: reversible and irreversible processes. Carnot engine and its efficiency.

#### UNIT 9 Kinetic Theory of Gases

Equation of state of a perfect gas, work done on compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic energy and temperature: rms speed of gas molecules; Degrees of freedom, Law of equipartition of energy, applications to specific heat capacities of gases; Mean free path, Avogadro's number.

#### UNIT 10 Oscillations And Waves

Periodic motion - period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M.) and its equation; phase; oscillations of a spring - restoring force and force constant; energy in S.H.M. - kinetic and potential energies; Simple pendulum - derivation of expression for its time period; Free, forced and damped oscillations, resonance. Wave motion Longitudinal and transverse waves, speed of a wave. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, Standing waves in strings and organ pipes, fundamental mode and harmonics, Beats, Doppler effect in sound.

#### UNIT 11 Electrostatics

Electric charges Conservation of charge, Coulomb's law-forces between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field Electric field due to a point charge, Electric field lines, Electric dipole, Electric field due to a dipole, Torque on a dipole in a uniform electric field. Electric flux, Gauss's law and its applications to find field due to infinitely long, uniformly charged straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell. Electric

potential and its calculation for a point charge, electric dipole and system of charges; Equipotential surfaces, Electrical potential energy of a system of two point charges in an electrostatic field.

Conductors and insulators, Dielectrics and electric polarization, capacitor, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, Energy stored in a capacitor.

#### **UNIT 12 Current Electricity**

Electric current, Drift velocity, Ohm's law, Electrical resistance, Resistances of different materials, V-I characteristics of Ohmic and non-ohmic conductors, Electrical energy and power, Electrical resistivity, Colour code for resistors; Series and parallel combinations of resistors; Temperature dependence of resistance. Electric Cell and its Internal resistance, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchhoff's laws and their applications. Wheatstone bridge, Metre bridge. Potentiometer - principle and its applications.

#### **UNIT 13 Magnetic Effects of Current and Magnetism**

Biot-Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long current carrying straight wire and solenoid. Force on a moving charge in uniform magnetic and electric fields Cyclotron. Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field, Moving coil galvanometer, its current sensitivity and conversion to ammeter and voltmeter. Current loop as a magnetic dipole and its magnetic dipole moment. Bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para, dia and ferro-magnetic substances Magnetic susceptibility and permeability, Hysteresis, Electromagnets and permanent magnets.

#### **UNIT 14 Electromagnetic Induction and Alternating Currents**

Electromagnetic induction; Faraday's law, induced emf and current; Lenz's Law, Eddy currents. Self and mutual inductance.

Alternating currents, peak and rms value of alternating current/ voltage; reactance and impedance; LCR series circuit, resonance; Quality factor, power in AC circuits, wattless current. AC generator and transformer.

#### **UNIT 15 Electromagnetic Waves**

Electromagnetic waves and their characteristics. Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays). Applications of e.m. waves.

#### **UNIT 16 Optics**

Reflection and refraction of light at plane and spherical surfaces, mirror formula, Total internal reflection and its applications, Deviation and Dispersion of light by a prism, Lens Formula, Magnification, Power of a Lens, Combination of thin lenses in contact, Microscope and Astronomical Telescope (reflecting and refracting) and their magnifying powers. Wave optics wave front and Huygens' principle, Laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarized light; Brewster's law, use of plane polarized light and Polaroids.

#### **UNIT 17 Dual Nature of Matter and Radiation**

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation, particle nature of light. Matter waves-wave nature of particle, de Broglie relation. Davisson-Germer experiment.

#### **UNIT 18 Atoms and Nuclei**

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number, nuclear fission and fusion.

#### **UNIT 19 Electronic Devices**

Semiconductors; semiconductor diode: I-V characteristics in forward and reverse bias; diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND & NOR). Transistor as a switch.

#### **UNIT 20 Communication Systems**

Propagation of electromagnetic waves in the atmosphere; Sky and space wave propagation, Need for modulation, Amplitude and Frequency Modulation, Bandwidth of signals, Bandwidth of Transmission medium, Basic Elements of a Communication System (Block Diagram only)

# All India Medical & Engineering Entrance Exam, AIIMS, NEET, & JEE Main Physics Previous Years Exam Papers Analysis Chart

S.No	Exam	Proposed Year	Question Paper	Total Question
<b>All India Pre Medical Test/National Eligibility Cum Entrance Test (AIPMT/NEET)</b>				
1.	NEET	04.09.2022		50
2.	NEET	17.07.2022		50
3.	NEET	12.09.2021		50
4.	NEET	13.09.2020		50
5.	NEET	05.06.2019		50
6.	NEET (Odisha)	2019		50
7.	NEET	06.05.2018		50
8.	NEET	07.05.2017		50
9.	NEET	01.05.2016	Phase-I	50
10.	NEET	24.06.2016	Phase-II	50
11.	AIPMT	25.07.2015		50
12.	AIPMT (Re-Exam)	2015		50
13.	NEET	04.05.2014		50
14.	NEET	05.05.2013		50
15.	NEET (Karnataka)	2013		50
16.	AIPMT	2012		50
17.	AIPMT Mains	2012		20
18.	AIPMT	2011		50
19.	AIPMT Mains	2011		20
20.	AIPMT	2010		50
21.	AIPMT Mains	2010		20
22.	AIPMT	2009		50
23.	AIPMT Mains	2009		20
24.	AIPMT	2008		50
25.	AIPMT Mains	2008		20
26.	AIPMT	2007		50
27.	AIPMT Mains	2007		20
28.	AIPMT	2006		50
29.	AIPMT Mains	2006		20
30.	AIPMT	2005		50
31.	AIPMT Mains	2005		20
32.	AIPMT	2004		50
33.	AIPMT Mains	2004		20
34.	AIPMT	2003		50
35.	AIPMT	2002		50
36.	AIPMT	2001		50
37.	AIPMT	2000		50
38.	AIPMT	1999		50
39.	AIPMT	1998		50
40.	AIPMT	1997		50
41.	AIPMT	1996		50
42.	AIPMT	1995		50
43.	AIPMT	1994		50
44.	AIPMT	1993		50
45.	AIPMT	1992		50
46.	AIPMT	1991		50
47.	AIPMT	1990		50
48.	AIPMT	1989		50
49.	AIPMT	1988		50
<b>Joint Entrance Examination (JEE Main)</b>				
50.	NTA JEE Main	24.01.2023	Shift-I	30
51.	NTA JEE Main	24.01.2023	Shift-II	30
52.	NTA JEE Main	25.01.2023	Shift-I	30
53.	NTA JEE Main	25.01.2023	Shift-II	30
54.	NTA JEE Main	29.01.2023	Shift-I	30
55.	NTA JEE Main	29.01.2023	Shift-II	30
56.	NTA JEE Main	30.01.2023	Shift-I	30
57.	NTA JEE Main	30.01.2023	Shift-II	30
58.	NTA JEE Main	31.01.2023	Shift-I	30
59.	NTA JEE Main	31.01.2023	Shift-II	30
60.	NTA JEE Main	01.02.2023	Shift-I	30
61.	NTA JEE Main	01.02.2023	Shift-II	30
62.	NTA JEE Main	29.07.2022	Shift-I	30
63.	NTA JEE Main	29.07.2022	Shift-II	30
64.	NTA JEE Main	28.07.2022	Shift-I	30
65.	NTA JEE Main	28.07.2022	Shift-II	30
66.	NTA JEE Main	27.07.2022	Shift-I	30

67.	NTA JEE Main	27.07.2022	Shift-II	30
68.	NTA JEE Main	26.07.2022	Shift-I	30
69.	NTA JEE Main	26.07.2022	Shift-II	30
70.	NTA JEE Main	25.07.2022	Shift-I	30
71.	NTA JEE Main	25.07.2022	Shift-II	30
72.	NTA JEE Main	29.06.2022	Shift-I	30
73.	NTA JEE Main	29.06.2022	Shift-II	30
74.	NTA JEE Main	28.06.2022	Shift-I	30
75.	NTA JEE Main	28.06.2022	Shift-II	30
76.	NTA JEE Main	27.06.2022	Shift-I	30
77.	NTA JEE Main	27.06.2022	Shift-II	30
78.	NTA JEE Main	26.06.2022	Shift-I	30
79.	NTA JEE Main	26.06.2022	Shift-II	30
80.	NTA JEE Main	25.06.2022	Shift-I	30
81.	NTA JEE Main	25.06.2022	Shift-II	30
82.	NTA JEE Main	24.06.2022	Shift-I	30
83.	NTA JEE Main	24.06.2022	Shift-II	30
84.	NTA JEE Main	01.09.2021	Shift-I	30
85.	NTA JEE Main	01.09.2021	Shift-II	30
86.	NTA JEE Main	31.08.2021	Shift-I	30
87.	NTA JEE Main	31.08.2021	Shift-II	30
88.	NTA JEE Main	27.08.2021	Shift-I	30
89.	NTA JEE Main	27.08.2021	Shift-II	30
90.	NTA JEE Main	26.08.2021	Shift-I	30
91.	NTA JEE Main	26.08.2021	Shift-II	30
92.	NTA JEE Main	27.07.2021	Shift-I	30
93.	NTA JEE Main	27.07.2021	Shift-II	30
94.	NTA JEE Main	25.07.2021	Shift-I	30
95.	NTA JEE Main	25.07.2021	Shift-II	30
96.	NTA JEE Main	22.07.2021	Shift-I	30
97.	NTA JEE Main	22.07.2021	Shift-II	30
98.	NTA JEE Main	20.07.2021	Shift-I	30
99.	NTA JEE Main	20.07.2021	Shift-II	30
100.	NTA JEE Main	18.03.2021	Shift-I	30
101.	NTA JEE Main	18.03.2021	Shift-II	30
102.	NTA JEE Main	17.03.2021	Shift-I	30
103.	NTA JEE Main	17.03.2021	Shift-II	30
104.	NTA JEE Main	16.03.2021	Shift-I	30
105.	NTA JEE Main	16.03.2021	Shift-II	30
106.	NTA JEE Main	26.02.2021	Shift-I	30
107.	NTA JEE Main	26.02.2021	Shift-II	30
108.	NTA JEE Main	25.02.2021	Shift-I	30
109.	NTA JEE Main	25.02.2021	Shift-II	30
110.	NTA JEE Main	24.02.2021	Shift-I	30
111.	NTA JEE Main	24.02.2021	Shift-II	30
112.	NTA JEE Main	06.09.2020	Shift-I	30
113.	NTA JEE Main	06.09.2020	Shift-II	30
114.	NTA JEE Main	05.09.2020	Shift-I	30
115.	NTA JEE Main	05.09.2020	Shift-II	30
116.	NTA JEE Main	04.09.2020	Shift-I	25
117.	NTA JEE Main	04.09.2020	Shift-II	25
118.	NTA JEE Main	03.09.2020	Shift-I	30
119.	NTA JEE Main	03.09.2020	Shift-II	30
120.	NTA JEE Main	02.09.2020	Shift-I	25
121.	NTA JEE Main	02.09.2020	Shift-II	25
122.	NTA JEE Main	09.01.2020	Shift-I	30
123.	NTA JEE Main	09.01.2020	Shift-II	30
124.	NTA JEE Main	08.01.2020	Shift-I	30
125.	NTA JEE Main	08.01.2020	Shift-II	30
126.	NTA JEE Main	07.01.2020	Shift-I	30
127.	NTA JEE Main	07.01.2020	Shift-II	30
128.	NTA JEE Main	12.04.2019	Shift-I	30
129.	NTA JEE Main	12.04.2019	Shift-II	30
130.	NTA JEE Main	10.04.2019	Shift-I	30
131.	NTA JEE Main	10.04.2019	Shift-II	30
132.	NTA JEE Main	09.04.2019	Shift-I	30
133.	NTA JEE Main	09.04.2019	Shift-II	30
134.	NTA JEE Main	08.04.2019	Shift-I	30
135.	NTA JEE Main	08.04.2019	Shift-II	30
136.	NTA JEE Main	12.01.2019	Shift-I	30
137.	NTA JEE Main	12.01.2019	Shift-II	30
138.	NTA JEE Main	11.01.2019	Shift-I	30
139.	NTA JEE Main	11.01.2019	Shift-II	30
140.	NTA JEE Main	10.01.2019	Shift-I	30

141.	NTA JEE Main	10.01.2019	Shift-II	30
142.	NTA JEE Main	09.01.2019	Shift-I	30
143.	NTA JEE Main	09.01.2019	Shift-II	30
144.	JEE Main	16.04.2018		30
145.	JEE Main	15.04.2018	Shift-I	30
146.	JEE Main	15.04.2018	Shift-II	30
147.	JEE Main	08.04.2018		30
148.	JEE Main	09.04.2017		30
149.	JEE Main	08.04.2017		30
150.	JEE Main	02.04.2017		30
151.	JEE Main	2016		30
152.	JEE Main	2015		30
153.	JEE Main	2014		30
154.	JEE Main	2013		30
155.	AIEEE	2012		30
156.	AIEEE	2011		30
157.	AIEEE	2010		30
158.	AIEEE	2009		30
159.	AIEEE	2008		30
160.	AIEEE	2007		30
161.	AIEEE	2006		30
162.	AIEEE	2005		30
163.	AIEEE	2004		30
164.	AIEEE	2003		30
165.	AIEEE	2002		30
<b>All India Institute of Medical Sciences (AIIMS)</b>				
166.	AIIMS	26.05.2019	Shift-I	60
167.	AIIMS	26.05.2019	Shift-II	60
168.	AIIMS	25.05.2019	Shift-I	60
169.	AIIMS	25.05.2019	Shift-II	60
170.	AIIMS	2018		60
171.	AIIMS	2017		60
172.	AIIMS	2016		60
173.	AIIMS	2015		60
174.	AIIMS	2014		60
175.	AIIMS	2013		60
176.	AIIMS	2012		60
177.	AIIMS	2011		60
178.	AIIMS	2010		60
179.	AIIMS	2009		60
180.	AIIMS	2008		60
181.	AIIMS	2007		60
182.	AIIMS	2006		60
183.	AIIMS	2005		60
184.	AIIMS	2004		60
185.	AIIMS	2003		60
186.	AIIMS	2002		60
187.	AIIMS	2001		60
188.	AIIMS	2000		60
189.	AIIMS	1999		60
190.	AIIMS	1998		60
191.	AIIMS	1997		60
192.	AIIMS	1996		60
193.	AIIMS	1994		60
<b>Assam Combined Entrance Examination (CEE)</b>				
194.	ASSAM-CEE	31.07.2022		40
195.	ASSAM-CEE	2021		40
196.	ASSAM-CEE	2020		40
197.	ASSAM-CEE	2019		40
198.	ASSAM-CEE	2018		40
199.	ASSAM-CEE	2017		40
200.	ASSAM-CEE	2016		40
201.	ASSAM-CEE	2014		40
<b>Andhra Pradesh Engineering, Agriculture and Medical Common Entrance Test (AP EAMCET)</b>				
202.	AP EAMCET Medical	2017		40
203.	AP EAMCET Medical	2016		40
204.	AP EAMCET Medical	2015		40
205.	AP EAMCET Medical	2014		40
206.	AP EAMCET Medical	2013		50
207.	AP EAMCET Medical	2012		50
208.	AP EAMCET Medical	2011		40
209.	AP EAMCET Medical	2010		40
210.	AP EAMCET Medical	2009		40
211.	AP EAMCET Medical	2008		40

212.	AP EAMCET Medical	2007		40
213.	AP EAMCET Medical	2006		40
214.	AP EAMCET Medical	2005		40
215.	AP EAMCET Medical	2004		40
216.	AP EAMCET Medical	2003		50
217.	AP EAMCET Medical	2002		40
218.	AP EAMCET Medical	2001		40
219.	AP EAMCET Medical	2000		40
220.	AP EAMCET Medical	1999		40
221.	AP EAMCET Medical	1998		50
222.	AP EAMCET Medical	1997		50
<b>Andhra Pradesh Engineering, Agriculture and Medical Common Entrance Test (AP EAMCET)</b>				
223.	AP EAMCET Engineering	12.07.2022	Shift-I	40
224.	AP EAMCET Engineering	12.07.2022	Shift-II	40
225.	AP EAMCET Engineering	11.07.2022	Shift-I	40
226.	AP EAMCET Engineering	11.07.2022	Shift-II	40
227.	AP EAMCET Engineering	08.07.2022	Shift-I	40
228.	AP EAMCET Engineering	08.07.2022	Shift-II	40
229.	AP EAMCET Engineering	07.07.2022	Shift-I	40
230.	AP EAMCET Engineering	07.07.2022	Shift-II	40
231.	AP EAMCET Engineering	06.07.2022	Shift-I	40
232.	AP EAMCET Engineering	06.07.2022	Shift-II	40
233.	AP EAMCET Engineering	05.07.2022	Shift-I	40
234.	AP EAMCET Engineering	05.07.2022	Shift-II	40
235.	AP EAMCET Engineering	04.07.2022	Shift-I	40
236.	AP EAMCET Engineering	04.07.2022	Shift-II	40
237.	AP EAMCET Engineering	05.10.2021	Shift-I	40
238.	AP EAMCET Engineering	05.10.2021	Shift-II	40
239.	AP EAMCET Engineering	03.09.2021	Shift-II	40
240.	AP EAPCET Engineering	03.09.2021	Shift-I	40
241.	AP EAPCET Engineering	06.09.2021	Shift-I	40
242.	AP EAPCET Engineering	06.09.2021	Shift-II	40
243.	AP EAPCET Engineering	07.09.2021	Shift-I	40
244.	AP EAMCET Engineering	25.08.2021	Shift-I	40
245.	AP EAMCET Engineering	25.08.2021	Shift-II	40
246.	AP EAMCET Engineering	24.08.2021	Shift-I	40
247.	AP EAMCET Engineering	24.08.2021	Shift-II	40
248.	AP EAMCET Engineering	23.08.2021	Shift-I	40
249.	AP EAMCET Engineering	23.08.2021	Shift-II	40
250.	AP EAMCET Engineering	20.08.2021	Shift-I	40
251.	AP EAMCET Engineering	20.08.2021	Shift-II	40
252.	AP EAMCET Engineering	19.08.2021	Shift-I	40
253.	AP EAPCET Engineering	19.08.2021	Shift-II	40
254.	AP EAPCET Engineering	07.10.2020	Shift-I	40
255.	AP EAPCET Engineering	07.10.2020	Shift-II	40
256.	AP EAPCET Engineering	25.09.2020	Shift-I	40
257.	AP EAPCET Engineering	25.09.2020	Shift-II	40
258.	AP EAPCET Engineering	24.09.2020	Shift-I	40
259.	AP EAPCET Engineering	24.09.2020	Shift-II	40
260.	AP EAMCET Engineering	23.09.2020	Shift-I	40
261.	AP EAMCET Engineering	23.09.2020	Shift-II	40
262.	AP EAMCET Engineering	22.09.2020	Shift-I	40
263.	AP EAMCET Engineering	22.09.2020	Shift-II	40
264.	AP EAMCET Engineering	21.09.2020	Shift-I	40
265.	AP EAMCET Engineering	21.09.2020	Shift-II	40
266.	AP EAMCET Engineering	18.09.2020	Shift-I	40
267.	AP EAMCET Engineering	18.09.2020	Shift-II	40
268.	AP EAMCET Engineering	17.09.2020	Shift-I	40
269.	AP EAMCET Engineering	17.09.2020	Shift-II	40
270.	AP EAPCET Engineering	24.04.2019	Shift-I	40
271.	AP EAPCET Engineering	24.04.2019	Shift-II	40
272.	AP EAMCET Engineering	23.04.2019	Shift-I	40
273.	AP EAMCET Engineering	23.04.2019	Shift-II	40
274.	AP EAMCET Engineering	22.04.2019	Shift-I	40
275.	AP EAMCET Engineering	22.04.2019	Shift-II	40
276.	AP EAMCET Engineering	21.04.2019	Shift-I	40
277.	AP EAMCET Engineering	21.04.2019	Shift-II	40
278.	AP EAMCET Engineering	20.04.2019	Shift-I	40
279.	AP EAMCET Engineering	20.04.2019	Shift-II	40
280.	AP EAPCET Engineering	25.04.2018	Shift-I	40
281.	AP EAPCET Engineering	25.04.2018	Shift-II	40
282.	AP EAMCET Engineering	24.04.2018	Shift-I	40
283.	AP EAMCET Engineering	24.04.2018	Shift-II	40
284.	AP EAMCET Engineering	23.04.2018	Shift-I	40

285.	AP EAMCET Engineering	23.04.2018	Shift-II	40
286.	AP EAMCET Engineering	22.04.2018	Shift-I	40
287.	AP EAMCET Engineering	22.04.2018	Shift-II	40
288.	AP EAPCET Engineering	28.04.2017	Shift-I	40
289.	AP EAPCET Engineering	28.04.2017	Shift-II	40
290.	AP EAMCET Engineering	26.04.2017	Shift-I	40
291.	AP EAMCET Engineering	26.04.2017	Shift-II	40
292.	AP EAMCET Engineering	25.04.2017	Shift-I	40
293.	AP EAMCET Engineering	25.04.2017	Shift-II	40
294.	AP EAMCET Engineering	24.04.2017	Shift-I	40
295.	AP EAMCET Engineering	24.04.2017	Shift-II	40
296.	AP EAMCET Engineering	2017		40
297.	AP EAMCET Engineering	2016		40
298.	AP EAMCET Engineering	2015		40
299.	AP EAMCET Engineering	2014		40
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308.	AP EAMCET Engineering	2005		40
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310.	AP EAMCET Engineering	2003		40
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312.	AP EAMCET Engineering	2001		40
313.	AP EAMCET Engineering	2000		40
314.	AP EAMCET Engineering	1999		40
315.	AP EAMCET Engineering	1998		40
316.	AP EAMCET Engineering	1997		40
317.	AP EAMCET Engineering	1996		40
318.	AP EAMCET Engineering	1995		40
319.	AP EAMCET Engineering	1994		40
320.	AP EAMCET Engineering	1993		40
321.	AP EAMCET Engineering	1992		40
322.	AP EAMCET Engineering	1991		40
<b>Aligarh Muslim University Engineering Entrance Examination (AMUEEE)</b>				
323.	AMU	2019		50
324.	AMU	2018		50
325.	AMU	2017		50
326.	AMU	2016		50
327.	AMU	2015		50
328.	AMU	2014		50
329.	AMU	2013		50
330.	AMU	2012		50
331.	AMU	2011		50
332.	AMU	2010		50
333.	AMU	2009		50
334.	AMU	2008		50
335.	AMU	2007		50
336.	AMU	2006		50
337.	AMU	2005		50
338.	AMU	2004		50
339.	AMU	2003		50
340.	AMU	2002		50
341.	AMU	2001		50
<b>Bihar Combined Entrance Competitive Examination (BCECE)</b>				
342.	BCECE	2018		50
343.	BCECE	2017		50
344.	BCECE	2016		50
345.	BCECE	2015		50
346.	BCECE	2014		50
347.	BCECE	2013		50
348.	BCECE	2012		50
349.	BCECE	2011		50
350.	BCECE	2010		50
351.	BCECE	2009		50
352.	BCECE	2008		50
353.	BCECE	2007		50
354.	BCECE	2006		50
355.	BCECE	2005		50
356.	BCECE	2004		50
357.	BCECE	2003		50

Birla Institute of Technology and Science Admission Test (BITSAT)				
358.	BITSAT	2020		40
359.	BITSAT	2019		40
360.	BITSAT	2018		40
361.	BITSAT	2017		40
362.	BITSAT	2016		40
363.	BITSAT	2015		40
364.	BITSAT	2014		40
365.	BITSAT	2013		40
366.	BITSAT	2012		40
367.	BITSAT	2011		40
368.	BITSAT	2010		40
369.	BITSAT	2009		40
370.	BITSAT	2008		40
371.	BITSAT	2007		40
372.	BITSAT	2006		40
373.	BITSAT	2005		40
Consortium of Medical, Engineering and Dental Colleges of Karnataka (COMEDK)				
374.	COMEDK-JEE	2020		60
375.	COMEDK-JEE	2019		60
376.	COMEDK-JEE	2018		60
377.	COMEDK-JEE	2017		60
378.	COMEDK-JEE	2016		60
379.	COMEDK-JEE	2015		60
380.	COMEDK-JEE	2014		60
381.	COMEDK-JEE	2013		60
382.	COMEDK-JEE	2012		60
383.	COMEDK-JEE	2011		60
Chhattisgarh Pre-Engineering Test (CGPET)				
384.	Chhattisgarh-PET	22.05.2022		50
385.	Chhattisgarh-PET	2021		50
386.	Chhattisgarh-PET	2019		50
387.	Chhattisgarh-PET	2018		50
388.	Chhattisgarh-PET	2017		50
389.	Chhattisgarh-PET	2016		50
390.	Chhattisgarh-PET	2015		50
391.	Chhattisgarh-PET	2014		50
392.	Chhattisgarh-PET	2013		50
393.	Chhattisgarh-PET	2012		50
394.	Chhattisgarh-PET	2011		50
395.	Chhattisgarh-PET	2010		50
396.	Chhattisgarh-PET	2009		50
397.	Chhattisgarh-PET	2008		50
398.	Chhattisgarh-PET	2007		50
399.	Chhattisgarh-PET	2006		50
400.	Chhattisgarh-PET	2005		50
401.	Chhattisgarh-PET	2004		50
Delhi College of Engineering (DCE)				
402.	DCE	2009		60
403.	DCE	2007		60
Gujarat Common Entrance Test (GUJCET)				
404.	GUJCET	18.04.2022		40
405.	GUJCET	06.08.2021		40
406.	GUJCET	2020		40
407.	GUJCET	2019		40
408.	GUJCET	2018		40
409.	GUJCET	2017		40
410.	GUJCET	2016		40
411.	GUJCET	2015		40
412.	GUJCET	2014		40
413.	GUJCET	2011		40
414.	GUJCET	2009		40
415.	GUJCET	2008		40
416.	GUJCET	2007		40
Himachal Pradesh Common Entrance Test (HPCET)				
417.	HPCET	2018		60
Jammu and Kashmir Common Entrance Test (JKCET)				
418.	JKCET	2019		75
419.	JKCET	2018		75
420.	JKCET	2017		75
421.	JKCET	2016		75
422.	JKCET	2015		75
423.	JKCET	2014		75
424.	JKCET	2013		75
425.	JKCET	2012		75
426.	JKCET	2011		75

427.	JKCET	2010	75
428.	JKCET	2009	75
429.	JKCET	2008	75
430.	JKCET	2007	75
431.	JKCET	2006	75
432.	JKCET	2005	75
433.	JKCET	2004	75
434.	JKCET	2003	75
435.	JKCET	2002	75
436.	JKCET	2001	75
437.	JKCET	2000	75
438.	JKCET	1999	75
439.	JKCET	1998	75
440.	JKCET	1997	75
<b>Jawahar Institute of Postgraduate Medical Education and Research (JIPMER)</b>			
441.	JIPMER	2019	60
442.	JIPMER	2018	60
443.	JIPMER	2017	60
444.	JIPMER	2016	60
445.	JIPMER	2015	60
446.	JIPMER	2014	60
447.	JIPMER	2013	60
448.	JIPMER	2012	60
449.	JIPMER	2011	60
450.	JIPMER	2010	60
451.	JIPMER	2009	60
452.	JIPMER	2008	60
453.	JIPMER	2007	60
454.	JIPMER	2006	60
455.	JIPMER	2005	60
456.	JIPMER	2004	60
<b>Jharkhand Combined Entrance Competitive Examination (JCECE)</b>			
457.	JCECE	2018	50
458.	JCECE	2017	50
459.	JCECE	2016	50
460.	JCECE	2015	50
461.	JCECE	2014	50
462.	JCECE	2013	50
463.	JCECE	2012	50
464.	JCECE	2011	50
465.	JCECE	2010	50
466.	JCECE	2009	50
467.	JCECE	2008	50
468.	JCECE	2007	50
469.	JCECE	2006	50
470.	JCECE	2005	50
471.	JCECE	2004	50
472.	JCECE	2003	50
<b>Kerala Commissioner for Entrance Examinations (K-CEE)</b>			
473.	Kerala CEE	04.07.2022	60
474.	Kerala CEE	2021	60
475.	Kerala CEE	2020	60
476.	Kerala CEE	2019	60
477.	Kerala CEE	2018	60
478.	Kerala CEE	2017	60
479.	Kerala CEE	2016	60
480.	Kerala CEE	2015	60
481.	Kerala CEE	2014	60
482.	Kerala CEE	2013	60
483.	Kerala CEE	2012	60
484.	Kerala CEE	2011	60
485.	Kerala CEE	2010	60
486.	Kerala CEE	2009	60
487.	Kerala CEE	2008	60
488.	Kerala CEE	2007	60
489.	Kerala CEE	2006	60
490.	Kerala CEE	2005	60
491.	Kerala CEE	2004	60
<b>Karnataka Common Entrance Test (K-CET)</b>			
492.	Karnataka-CET	17.06.2022	60
493.	Karnataka-CET	2021	60
494.	Karnataka-CET	2020	60
495.	Karnataka-CET	2019	60
496.	Karnataka-CET	2018	60
497.	Karnataka-CET	2017	60
498.	Karnataka-CET	2016	60

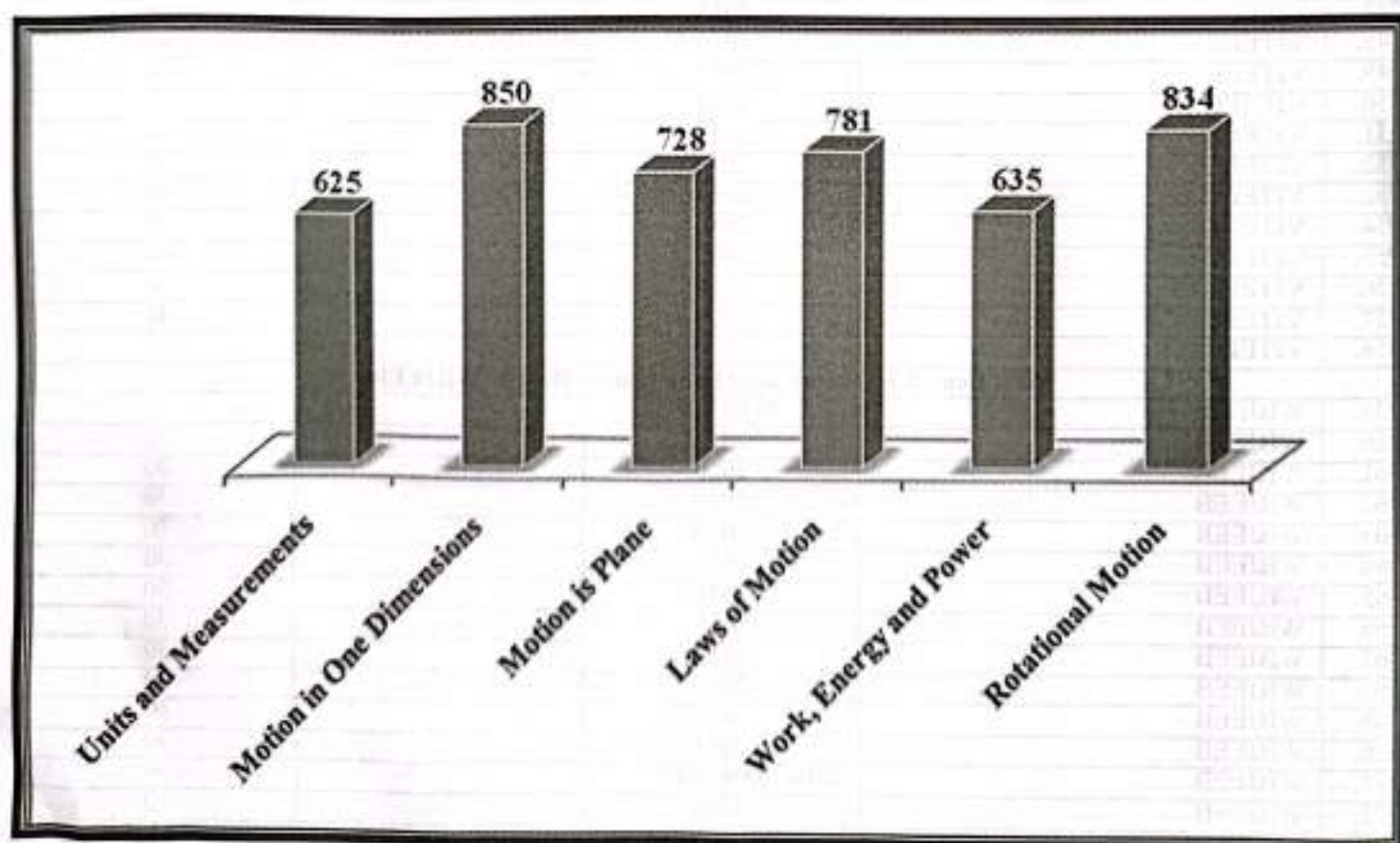
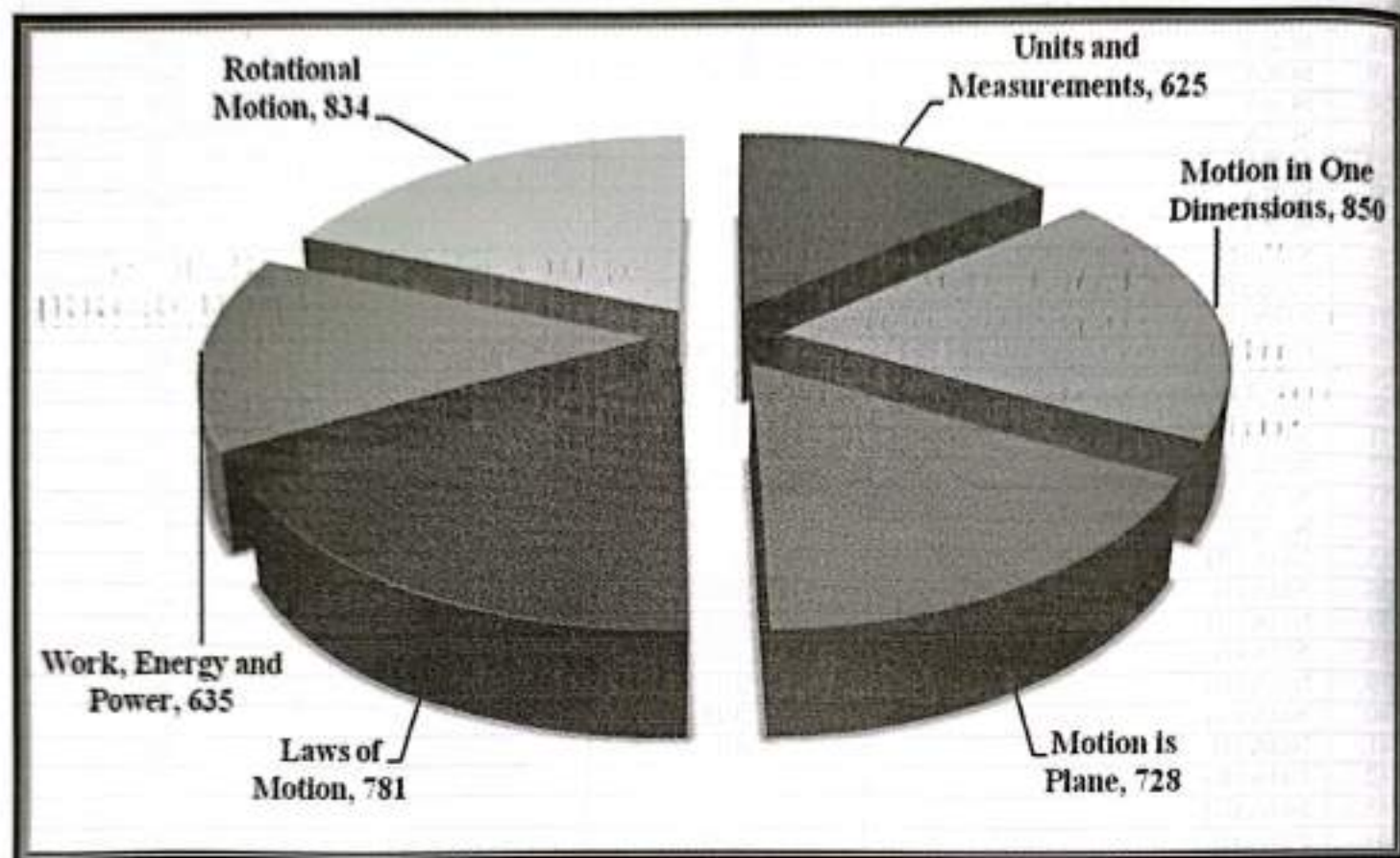
499.	Karnataka-CET	2015		60
500.	Karnataka-CET	2014		60
501.	Karnataka-CET	2013		60
502.	Karnataka-CET	2012		60
503.	Karnataka-CET	2011		60
504.	Karnataka-CET	2010		60
505.	Karnataka-CET	2009		60
506.	Karnataka-CET	2008		60
507.	Karnataka-CET	2007		60
508.	Karnataka-CET	2006		60
509.	Karnataka-CET	2005		60
510.	Karnataka-CET	2004		60
511.	Karnataka-CET	2003		60
512.	Karnataka-CET	2002		60
513.	Karnataka-CET	2001		60
<b>Kishore Vaigyanik Protsahan Yojana (KVPY)</b>				
514.	KVPY SA	2021		20
515.	KVPY SX	2021		20
516.	KVPY SA	2020		20
517.	KVPY SX	2020		20
518.	KVPY SA	2019		20
519.	KVPY SX	2019		20
520.	KVPY SA	2018		20
521.	KVPY SX	2018		20
522.	KVPY SA	2017		20
523.	KVPY SX	2017		20
524.	KVPY SA	2016		20
525.	KVPY SX	2016		20
526.	KVPY SA	2015		20
527.	KVPY SX	2015		20
528.	KVPY SA	2014		20
529.	KVPY SX	2014		20
530.	KVPY SA	2013		20
531.	KVPY SX	2013		20
532.	KVPY SA	2012		20
533.	KVPY SX	2012		20
534.	KVPY SA	2011		20
535.	KVPY SX	2011		20
536.	KVPY SA	2010		20
537.	KVPY SX	2010		20
538.	KVPY SA	2009		20
539.	KVPY SX	2009		20
<b>Madhya Pradesh Pre Engineering Test (MPPET)</b>				
540.	MP PMT	2013	Paper-I	50
541.	MP PMT	2013	Paper-II	50
542.	MPPET	2012		50
543.	MPPET	2009		50
544.	MPPET	2008		50
<b>Manipal University Under Graduate Entrance Test (M-UGET)</b>				
545.	M-UGET	2020		50
546.	M-UGET	2019		50
547.	M-UGET	2018		50
548.	M-UGET	2017		50
549.	M-UGET	2016		50
550.	M-UGET	2015		50
551.	M-UGET	2014		50
552.	M-UGET	2013		50
553.	M-UGET	2012		50
554.	M-UGET	2011		50
555.	M-UGET	2010		50
556.	M-UGET	2009		50
557.	M-UGET	2008		50
<b>Maharashtra Common Entrance Test (MHT-CET)</b>				
558.	MHT-CET	20.10.2020	Shift-I	50
559.	MHT-CET	20.10.2020	Shift-II	50
560.	MHT-CET	19.10.2020	Shift-I	50
561.	MHT-CET	19.10.2020	Shift-II	50
562.	MHT-CET	16.10.2020	Shift-I	50
563.	MHT-CET	16.10.2020	Shift-II	50
564.	MHT-CET	15.10.2020	Shift-I	50
565.	MHT-CET	15.10.2020	Shift-II	50
566.	MHT-CET	14.10.2020	Shift-I	50
567.	MHT-CET	14.10.2020	Shift-II	50
568.	MHT-CET	13.10.2020	Shift-I	50

569.	MHT-CET	13.10.2020	Shift-II	50
570.	MHT-CET	12.10.2020	Shift-I	50
571.	MHT-CET	12.10.2020	Shift-II	50
572.	MHT-CET	08.10.2020	Shift-I	50
573.	MHT-CET	07.10.2020	Shift-I	50
574.	MHT-CET	06.10.2020	Shift-I	50
575.	MHT-CET	05.10.2020	Shift-I	50
576.	MHT-CET	04.10.2020	Shift-I	50
577.	MHT-CET	01.10.2020	Shift-I	50
578.	MHT-CET	02.05.2019	Shift-I	50
579.	MHT-CET	02.05.2019	Shift-II	50
580.	MHT-CET	03.05.2019		50
581.	MHT-CET	2018		50
582.	MHT-CET	2017		50
583.	MHT-CET	2016		50
584.	MHT-CET	2015		50
585.	MHT-CET	2014		50
586.	MHT-CET	2013		50
587.	MHT-CET	2012		50
588.	MHT-CET	2011		50
589.	MHT-CET	2010		50
590.	MHT-CET	2009		50
591.	MHT-CET	2008		50
592.	MHT-CET	2007		50
593.	MHT-CET	2006		50
594.	MHT-CET	2005		50
595.	MHT-CET	2004		50
<b>National Talent Search Examination (NTSE)</b>				
596.	NTSE-Andhra Pradesh	2019		10
597.	NTSE-Bihar	2019		10
598.	NTSE-Chhattisgarh	2019		10
599.	NTSE-Delhi	2019		10
600.	NTSE-Goa	2019		10
601.	NTSE-Jharkhand	2019		10
602.	NTSE-Karnataka	2019		10
603.	NTSE-Kerala	2019		10
604.	NTSE-Madhya Pradesh	2019		10
605.	NTSE-Maharashtra	2019		10
606.	NTSE-Odisha	2019		10
607.	NTSE-Punjab	2019		10
608.	NTSE-Tamil Nadu	2019		10
609.	NTSE-Telangana	2019		10
610.	NTSE-Uttar Pradesh	2019		10
611.	NTSE-Uttarakhand	2019		10
612.	NTSE-West Bengal	2019		10
613.	NTSE-Gujarat	2018		10
614.	NTSE-Jharkhand	2018		10
<b>SRM Joint Engineering Entrance Examination (SRM-JEE)</b>				
615.	SRM-JEE	2019		40
616.	SRM-JEE	2018		40
617.	SRM-JEE	2017		40
618.	SRM-JEE	2016		40
619.	SRM-JEE	2015		40
620.	SRM-JEE	2014		40
621.	SRM-JEE	2013		40
622.	SRM-JEE	2012		40
623.	SRM-JEE	2011		40
624.	SRM-JEE	2010		40
625.	SRM-JEE	2009		40
626.	SRM-JEE	2008		40
627.	SRM-JEE	2007		40
<b>Telangana State Engineering, Agriculture &amp; Medical Common Entrance Test (TS EAMCET)</b>				
628.	TS EAMCET	31.07.2022	Shift-I	40
629.	TS EAMCET	31.07.2022	Shift-II	40
630.	TS EAMCET	30.07.2022	Shift-I	40
631.	TS EAMCET	30.07.2022	Shift-II	40
632.	TS EAMCET	20.07.2022	Shift-I	40
633.	TS EAMCET	20.07.2022	Shift-II	40
634.	TS EAMCET	19.07.2022	Shift-I	40
635.	TS EAMCET	19.07.2022	Shift-II	40
636.	TS EAMCET	18.07.2022	Shift-I	40
637.	TS EAMCET	18.07.2022	Shift-II	40
638.	TS EAMCET	10.08.2021	Shift-I	40
639.	TS EAMCET	09.08.2021	Shift-II	40

640.	TS EAMCET	09.08.2021	Shift-II	40
641.	TS EAMCET	06.08.2021	Shift-I	40
642.	TS EAMCET	06.08.2021	Shift-II	40
643.	TS EAMCET	05.08.2021	Shift-I	40
644.	TS EAMCET	05.08.2021	Shift-II	40
645.	TS EAMCET	04.08.2021	Shift-I	40
646.	TS EAMCET	04.08.2021	Shift-II	40
647.	TS EAMCET	29.09.2020	Shift-I	40
648.	TS EAMCET	29.09.2020	Shift-II	40
649.	TS EAMCET	28.09.2020	Shift-I	40
650.	TS EAMCET	28.09.2020	Shift-II	40
651.	TS EAMCET	14.09.2020	Shift-I	40
652.	TS EAMCET	14.09.2020	Shift-II	40
653.	TS EAMCET	11.09.2020	Shift-I	40
654.	TS EAMCET	11.09.2020	Shift-II	40
655.	TS EAMCET	10.09.2020	Shift-I	40
656.	TS EAMCET	10.09.2020	Shift-II	40
657.	TS EAMCET	09.09.2020	Shift-I	40
658.	TS EAMCET	09.09.2020	Shift-II	40
659.	TS EAMCET	09.05.2019	Shift-I	40
660.	TS EAMCET	09.05.2019	Shift-II	40
661.	TS EAMCET	08.05.2019	Shift-I	40
662.	TS EAMCET	08.05.2019	Shift-II	40
663.	TS EAMCET	06.05.2019	Shift-I	40
664.	TS EAMCET	04.05.2019	Shift-I	40
665.	TS EAMCET	04.05.2019	Shift-II	40
666.	TS EAMCET	03.05.2019	Shift-I	40
667.	TS EAMCET	03.05.2019	Shift-II	40
668.	TS EAMCET	07.05.2018	Shift-I	40
669.	TS EAMCET	05.05.2018	Shift-I	40
670.	TS EAMCET	05.05.2018	Shift-II	40
671.	TS EAMCET	04.05.2018	Shift-I	40
672.	TS EAMCET	04.05.2018	Shift-II	40
673.	TS EAMCET	03.05.2018	Shift-I	40
674.	TS EAMCET	02.05.2018	Shift-I	40
675.	TS EAMCET	02.05.2018	Shift-II	40
676.	TS EAMCET Engineering	2017		40
677.	TS EAMCET Agriculture	2017		40
678.	TS EAMCET Engineering	2016		40
679.	TS EAMCET Agriculture	2016		40
680.	TS EAMCET Engineering	2015		40
681.	TS EAMCET Agriculture	2015		40
<b>Tripura Joint Entrance Examination (TJEE)</b>				
682.	Tripura JEE	27.04.2022		50
683.	Tripura JEE	2021		50
684.	Tripura JEE	2020		50
685.	Tripura JEE	2019		50
686.	Tripura JEE	2018		50
<b>Uttar Pradesh State Entrance Examination (UPSEE)</b>				
687.	UPSEE	2020		50
688.	UPSEE	2019		50
689.	UPSEE	2018		50
690.	UPSEE	2017		50
691.	UPSEE	2016		50
692.	UPSEE	2015		50
693.	UPSEE	2014		50
694.	UPSEE	2013		50
695.	UPSEE	2012		50
696.	UPSEE	2011		50
697.	UPSEE	2010		50
698.	UPSEE	2009		50
699.	UPSEE	2008		50
700.	UPSEE	2007		50
701.	UPSEE	2006		50
702.	UPSEE	2005		50
703.	UPSEE	2004		50
<b>Uttar Pradesh Combined Pre Medical Test (UPCPMT)</b>				
704.	UPCPMT	2014		50
705.	UPCPMT	2013		50
706.	UPCPMT	2012		50
707.	UPCPMT	2011		50
708.	UPCPMT	2010		50
709.	UPCPMT	2009		50
710.	UPCPMT	2008		50

711.	UPCPMT	2007	50
712.	UPCPMT	2006	50
713.	UPCPMT	2005	50
714.	UPCPMT	2004	50
715.	UPCPMT	2003	50
716.	UPCPMT	2002	50
717.	UPCPMT	2001	50
<b>UPSC Special Class Railway Apprentice (SCRA)/UPSC NDA</b>			
718.	SCRA	2015	60
719.	SCRA	2014	60
720.	SCRA	2013	60
721.	SCRA	2012	60
722.	SCRA	2011	60
723.	SCRA	2010	60
724.	SCRA	2009	60
725.	NDA (I)	2023	20
726.	NDA (II)	2023	20
727.	NDA (I)	2022	20
728.	NDA (II)	2022	20
729.	NDA (I)	2021	20
730.	NDA (II)	2021	20
731.	NDA (I)	2020	20
732.	NDA (II)	2020	20
733.	NDA (II)	2019	20
734.	NDA (I)	2019	20
735.	NDA (II)	2018	20
736.	NDA (I)	2018	20
737.	NDA (II)	2017	20
738.	NDA (I)	2017	20
739.	NDA (II)	2016	20
740.	NDA (II)	2015	20
741.	NDA (I)	2015	20
742.	NDA (II)	2014	20
743.	NDA (II)	2011	20
744.	NDA (I)	2011	20
<b>Vellore Institute of Technology Engineering Entrance Examination (VITEEE)</b>			
745.	VITEEE	2019	40
746.	VITEEE	2018	40
747.	VITEEE	2017	40
748.	VITEEE	2016	40
749.	VITEEE	2015	40
750.	VITEEE	2014	40
751.	VITEEE	2013	40
752.	VITEEE	2012	40
753.	VITEEE	2011	40
754.	VITEEE	2010	40
755.	VITEEE	2009	40
756.	VITEEE	2008	40
757.	VITEEE	2007	40
758.	VITEEE	2006	40
<b>West Bengal Joint Entrance Examination Board (WBJEEB)</b>			
759.	WBJEEB	30.04.2022	30
760.	WBJEEB	2021	30
761.	WBJEEB	2020	30
762.	WBJEEB	2019	30
763.	WBJEEB	2018	30
764.	WBJEEB	2017	30
765.	WBJEEB	2016	30
766.	WBJEEB	2015	30
767.	WBJEEB	2014	30
768.	WBJEEB	2013	30
769.	WBJEEB	2012	30
770.	WBJEEB	2011	30
771.	WBJEEB	2010, 2009, 2008	90
772.	WBJEEB	2007	30
<b>Total</b>			<b>35205</b>

# Trend Analysis of NEET/JEE Main Physics Questions Through Pie chart and Bar Graph



**(a) Physical Quantities**

1. The two principal thrusts in physics are

- Diversification and complete
- Unification and simplification
- Unification and reduction
- Diversification and simplification

AP EAMCET-08.07.2022, Shift-II

Ans. (c) : The two principal thrusts in physics are Unification and Reduction.

2. Choose the correct statement from following.

- Not all basic laws of physics are universal
- Conservation laws have a deep connection with symmetries of nature
- There are four to six fundamental forces in nature that govern the diverse phenomena of the world
- Physics can generate new technology but new physics cannot come out from technology

TS EAMCET 18.07.2022, Shift-I

Ans. (b) : A conservation law is a hypothesis based on observations and experiments.

- Conservation of law is a principle that states that a certain physical property does not change in the course of time within an isolated physical system.
- Conservation laws have a deep connection with symmetries of nature.

3. One angstrom ( $\text{\AA}$ ) is equal to:

- $10^{-6} \text{ mm}$
- $10^{-7} \text{ mm}$
- $10^{-8} \text{ mm}$
- $10^{-9} \text{ mm}$

AP EAMCET-20.08.2021, Shift-II

Ans. (b) : One angstrom is equal to  $= 1 \times 10^{-7} \text{ mm}$

$$\begin{aligned} \therefore 1 \text{ \AA} &= 10^{-10} \text{ m} \\ &= 10^{-10} (10^3) \text{ mm} \quad (1 \text{ m} = 10^3 \text{ mm}) \\ &= 10^{-7} \text{ mm} \end{aligned}$$

4. In which physical quantity, maximum percentage change will be observed, when a copper sphere is heated?

- radius
- area
- volume
- length

AP EAMCET-25.09.2020, Shift-I

Ans. (c) : When a copper sphere is heated then maximum percentage change will be observed in its volume.

- Change in Area ( $A$ )  $= 4\pi r^2$

$$\therefore \frac{\Delta A}{A} = 2 \left( \frac{\Delta r}{r} \right) = \text{Two times the percentage change}$$

- Change in volume

$$V = \frac{4}{3} \pi r^3$$

$$\therefore \frac{\Delta V}{V} = 3 \left( \frac{\Delta r}{r} \right) = 3 \text{ times the percentage change in radius}$$

So, maximum change will occur in volume, when a copper sphere is heated.

5. The angle of  $1'$  (minute of arc) in radian is nearly equal to

- $2.91 \times 10^{-4} \text{ rad}$
- $4.85 \times 10^{-4} \text{ rad}$
- $4.80 \times 10^{-6} \text{ rad}$
- $1.75 \times 10^{-2} \text{ rad}$

[NEET (Oct.) 2020]

Ans. (a) : We know that,

$$\begin{aligned} 1' (\text{minute of arc}) &= \left( \frac{1}{60} \right)^\circ \\ &= \frac{1}{60} \times \frac{\pi}{180} \text{ radian} \\ &= \frac{\pi}{60 \times 180} \\ &= \frac{3.14}{10800} \\ &= 0.0291 \times 10^{-2} \\ &= 2.91 \times 10^{-4} \text{ radian} \end{aligned}$$

6. A dimensionless physical quantity \_\_\_\_\_

- may have a unit
- always has a unit
- never has a unit
- does not exist

AP EAMCET-24.09.2020, Shift-II

Ans. (a) : A dimensionless physical quantity may have a unit. It cannot be expressed in term of SI quantities. e.g. Radian in the unit for an angle, but it is dimensionless because it is defined to be the ratio of two lengths.

7. The density of a material in SI units is  $128 \text{ kg m}^{-3}$ . In certain units in which the unit of length is 25 cm and the unit of mass is 50 g, the numerical value of density of the material is

- 40
- 16
- 640
- 410

JEE Main-10.01.2019, Shift-I

Ans. (a) : We know that

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}} = \frac{M}{V} = \frac{M}{L^3}$$

$$\text{Then, } n_1 u_1 = n_2 u_2$$

$$128 [M_1 L_1^{-3}] = n_2 [M_2 L_2^{-3}]$$

$$n_2 = \frac{128 [M_1 L_1^{-3}]}{[M_2 L_2^{-3}]}$$

$$n_1 = \text{numerical value in S.I unit}$$

$$u_1 = \text{unit in S.I.}$$

$$n_2 = \text{numerical value in other unit}$$

$$u_2 = \text{unit in other system}$$

In second unit system  $m = 50g = \frac{50}{1000} \text{ kg}$ .

$$L = 25\text{cm} = \frac{25}{100} \text{ mtr}$$

$$n_2 = 128 \left[ \frac{M_1}{M_2} \right] \left[ \frac{L_2}{L_1} \right]^3$$

$$= 128 \times \left[ \frac{1}{50} \right] \times \left[ \frac{25}{100} \right]^3$$

$$= 128 \times 20 \times \left( \frac{1}{4} \right)^3$$

$$= 128 \times 20 \times \left( \frac{1}{64} \right)$$

$$= 40$$

8. The range of masses we study in Physics is

- (a)  $10^{-27}$  to  $10^{60}$  kg (b)  $10^{-27}$  to  $10^{55}$  kg  
(c)  $10^{-30}$  to  $10^{55}$  kg (d)  $10^{-30}$  to  $10^{60}$  kg

COMEDK 2019

Ans. (c): The electron is considered to be the particle with least mass of  $10^{-30}$  kg. The mass of the known universe is considered to have the highest mass of  $10^{55}$  kg.

9. How many astronomical units are there in 1 metre

- (a)  $6.68 \times 10^{12}$  Au (b)  $6.68 \times 10^{-10}$  Au  
(c)  $6.68 \times 10^{10}$  Au (d)  $6.68 \times 10^{-12}$  Au

SRMJEE-2019

Ans. (d):  $1 \text{ Au} = 1.496 \times 10^{11} \text{ m}$

$$1 \text{ m} = \frac{1}{1.496 \times 10^{11}} \text{ Au}$$

$$1 \text{ m} = 6.68 \times 10^{-12} \text{ Au}$$

10. What is dimensions of energy in terms of linear momentum (P), area of (A) and Time (T)

- (a)  $[P^1 A^1 T^1]$  (b)  $[P^2 A^2 T^{-1}]$   
(c)  $[P^1 A^{1/2} T^{-1}]$  (d)  $[P^{1/2} A^{1/2} T^{-1}]$

JIPMER-2019

Ans. (c): Let,

$$\text{Energy } E = k P^a A^b T^c \quad \dots\dots(i)$$

Where  $k$  is a dimensionless constant of proportionality-

Writing dimension on both sides-

$$[ML^2T^{-2}] = [MLT^{-1}]^a [M^0L^2T^0]^b [M^0L^0T^1]^c$$

$$[ML^2T^{-2}] = [M^a L^{a+2b} T^{-a+c}]$$

Comparing the power from both sides-

$$a = 1 \quad \dots\dots(ii)$$

$$a+2b = 2 \quad \dots\dots(iii)$$

$$-a+c = -2 \quad \dots\dots(iv)$$

On solving (ii), (iii) and (iv), we have-

$$a = 1, b = 1/2, c = -1$$

$$\text{So, } [E] = [P^1 A^{1/2} T^{-1}]$$

11. If  $10 \text{ g cms}^{-1} = x \text{ Ns}$ , then the number is \_\_\_\_\_

- (a)  $1 \times 10^{-5}$  (b)  $1 \times 10^{-4}$   
(c)  $1 \times 10^{-6}$  (d)  $1 \times 10^{-3}$

AP EAMCET-24.04.2018, Shift-II

Ans. (a): We know that

$$1 \text{ g} = 10^{-3} \text{ kg}$$

$$1 \text{ cm} = 10^{-2} \text{ m}$$

According to question-

$$10 \text{ g cms}^{-1} = 10^{-3} \text{ kg} \times 10^{-2} \text{ m} \times \text{sec}^{-1}$$

$$= 10^{-5} \text{ kg m. sec}^{-1}$$

$$= 10^{-5} \text{ Ns} \quad \left[ N = \frac{\text{kgm}}{\text{sec}} \right]$$

12. Order of magnitude of a physical quantity is the

- (a) Power of 5 of the number that describes the quantity  
(b) Power of 10 of the number that describes the quantity  
(c) Power of 100 of the number that describes the quantity  
(d) Power of 0.01 of the number that describes the quantity

J&K-CET-2018

Ans. (b): The order of magnitude of a physical quantity is the power of 10 of the number that describes the quantity. It tells us about the largeness or smallness of a physical quantity. It is expressed in the form of  $a \times 10^b$  where  $1 \leq a < 10$  and  $b$  is a positive or negative integer.

13. A star is very far from earth. If light 10 years from it to reach the earth, calculate the distance between star and earth.

- (a)  $9.45 \times 10^{16} \text{ m}$  (b)  $9.46 \times 10^{16} \text{ m}$   
(c)  $9.46 \times 10^{17} \text{ m}$  (d)  $9.46 \times 10^{17} \text{ m}$

SRM JEE-2018

Ans. (a):

We know that One-light year is the distance Travelled by light in one year.

$$1 \text{ light year} = 9.46 \times 10^{12} \text{ km} = 9.46 \times 10^{15} \text{ m}$$

So,

$$10 \text{ light year} = 9.4 \times 10^{15} \times 10 \text{ m}$$

$$= 9.46 \times 10^{16} \text{ m}$$

14. It is estimated that  $\text{cm}^2$  of earth receives about 2 calorie of heat energy per minute from the sun. This is called solar constant, the value of solar constant in S.I. units is

- (a)  $2 \text{ J m}^2 \text{ s}^{-1}$  (b)  $1.4 \text{ Wm}^{-2}$   
(c)  $2.4 \text{ kWm}^{-2}$  (d)  $1.4 \text{ kJm}^{-2} \text{ s}^{-1}$

AP EAMCET-25.04.2017, Shift-I

Ans. (d): Given that,

It is estimated that  $\text{cm}^2$  of earth receives about 2 calorie of heat energy per minute from the sun.

$$S = 2 \text{ cal/cm}^2 \text{-min}$$

We know that,

$$1 \text{ cal} = 4.18 \text{ J}$$

$$1 \text{ cm} = 10^{-2} \text{ m}$$

$$1 \text{ min} = 60 \text{ sec}$$

$$\therefore S = \frac{2 \times 4.18}{(10^{-2})^2 \times 60} \frac{\text{J}}{\text{m}^2 \text{-sec}}$$

$$S = \frac{2 \times 4.18}{10^{-4} \times 60}$$



17. The major contribution of Sir C.V. Raman is  
 (a) Explanation of photoelectric effect  
 (b) Principle of buoyancy  
 (c) Scattering of light by molecules of a medium  
 (d) Electromagnetic theory

AP EAMCET(Medical)-2014

Ans. (c) : The academy of sciences has resolved to accord the Noble Prize in Physics for 1930 to Sir Chandrasekhara Venkata Raman for his work on the scattering of light and for the discovery of the effect named after him.

18. Pick out the stranger  
 (a) Newton-Meter (b) Coulomb-Volt  
 (c) Coulomb-Farad (d) Watt-Second

SRMJEE - 2014

Ans. (c) : Newton - meter = J  
 Coulomb - volt = J  
 Watt - sec = J  
 and Coulomb - farad  $\neq$  J

19. The prefix atto means  
 (a)  $10^{-21}$  (b)  $10^{-15}$   
 (c)  $10^{-18}$  (d)  $10^{-12}$

SRMJEE - 2015

Ans. (c) : Atto stands for  $10^{-18}$ .

20. A bus travels at 110 km/hr (kilometers per hour) on open highway. Its speed in meters per second is  
 (a) 30.6m/s (b) 60.2m/s  
 (c) 40m/s (d) 50.4m/s

SRMJEE - 2015

Ans. (a) :  $S = \frac{110\text{km}}{\text{hr}} = \frac{110 \times 1000}{60 \times 60}$   
 $= 110 \times \frac{5}{18} \text{ m/s}$   
 $= 30.6 \text{ m/s}$

21. The prefix giga means  
 (a)  $10^{-9}$  (b)  $10^9$   
 (c)  $10^6$  (d)  $10^{-6}$

SRMJEE - 2016

Ans. (b) : Giga stands for  $10^9$ .

22. In a new system of units, unit of mass is 10 kg, unit of length is 1 km and unit of time is 1 minute. The value of 1 joule in this new hypothetical system is  
 (a)  $3.6 \times 10^{-4}$  new units  
 (b)  $6 \times 10^7$  new units  
 (c)  $10^{11}$  new units  
 (d)  $1.67 \times 10^4$  new units

COMEDK 2016

Ans. (a): Given,  $M = 10 \text{ kg}$ ,  $L = 1 \text{ km}$ ,  $T = 1 \text{ minute}$   
 Now, let  $n_1$  and  $n_2$  are the S.I unit and unit of new system.

Here,  $n_1 = 1\text{J}$

The dimensional formula of energy is  $[ML^2T^{-2}]$

So, S.I unit of energy = new system

$$n_1 ([M_1 L_1^2 T_1^{-2}]) = n_2 ([M_2 L_2^2 T_2^{-2}])$$

$$\frac{n_2}{n_1} = \left(\frac{M_1}{M_2}\right) \left(\frac{L_1}{L_2}\right)^2 \left(\frac{T_1}{T_2}\right)^{-2}$$

$$\frac{n_2}{n_1} = \left(\frac{1}{10}\right) \times \left(\frac{1}{1000}\right)^2 \times \left(\frac{1}{60}\right)^{-2}$$

$$\frac{n_2}{n_1} = 1 \times \frac{36}{100000}$$

$$n_2 = 1 \times 3.6 \times 10^{-4} \text{ J}$$

$$n_2 = 3.6 \times 10^{-4} \text{ J}$$

23. Which of the following physical quantity unit not a fundamental unit?

- (a) Length (b) Mass  
 (c) Magnetic field (d) Current

J&K-CET-2006

Ans. (c) : Magnetic field is not a fundamental unit. Fundamental units are length, mass, time, temperature, amount of substance, current, luminous intensity. These units are used to measure the fundamental quantities.

24. Density of liquid in CGS system is 0.625 g/cm<sup>3</sup>. What is its magnitude in SI system?

- (a) 0.625 (b) 0.0625  
 (c) 0.00625 (d) 625

J&K CET-2006

Ans. (d) : Given that,

$$\begin{aligned} \text{Density} &= \frac{\text{Mass}}{\text{Volume}} = 0.625 \text{ g/cm}^3 \\ &= \frac{0.625 \times 10^{-3} \text{ kg}}{10^{-6} \text{ m}^3} \\ &= 0.625 \times 10^3 \text{ kg/m}^3 \\ &= 625 \text{ kg/m}^3 \end{aligned}$$

25. The following physical quantities has a ratio of  $10^3$  between its SI units and CGS units

- (a) Universal gravitational constant  
 (b) Boltzman's constant  
 (c) Planck's constant  
 (d) Young's modulus of elasticity

EAMCET-1996

Ans. (a) : Universal gravitational constant

$$\text{SI unit} = \frac{\text{N-m}^2}{\text{kg}^2}$$

$$\text{CGS unit} = \frac{\text{dyne-cm}^2}{\text{gm}^2}$$

$$\text{Ratio} = \frac{\text{SI unit}}{\text{CGS unit}} = \frac{\text{N-m}^2}{\text{kg}^2} \times \frac{\text{gm}^2}{\text{dyne-cm}^2}$$

$$= \frac{\text{N-m}^2}{\text{kg}^2} \times \frac{(10^{-3} \text{ kg})^2}{10^{-5} \text{ N} \times 10^{-4} \text{ m}^2}$$

$$= \frac{\text{N-m}^2}{\text{kg}^2} \times \frac{10^{-4} \text{ kg}^2}{10^{-9} \text{ N-m}^2}$$

$$= 10^{-6+9}$$

$$= 10^3$$

Hence, the ratio of universal gravitational constant has  $10^3$  between its SI unit and CGS units.

26. In a particular system, the unit of length, mass and time are chosen to be 10 cm, 10 g and 0.1 s respectively. The unit of force in this system will be equivalent to
- (a) 0.1 N (b) 1 N  
(c) 10 N (d) 100 N

[AIPMT 1994]

Ans. (a) : We know that

$$1\text{N} = \frac{1\text{kg} \times 1\text{m}}{1\text{s}^2} \\ = \frac{1000\text{g} \times 100\text{cm}}{1\text{s}^2} \\ = \frac{100 \times (10\text{g}) \times 10 \times (10\text{cm})}{100 \times (0.1)^2}$$

So,  $1\text{N} = 10 F_{\text{new}}$  ( $F_{\text{new}}$  is new unit of force)

$$F_{\text{new}} = \frac{1}{10}\text{N} = 0.1\text{N}$$

27. The value of Planck's constant in SI unit is
- (a)  $6.63 \times 10^{-31}\text{J-s}$  (b)  $6.63 \times 10^{-30}\text{kg-m/s}$   
(c)  $6.63 \times 10^{-32}\text{kg-m}^2$  (d)  $6.63 \times 10^{-34}\text{J-s}$

[AIPMT 2002]

Ans. (d) : Value of Planck's constant in SI unit is  $6.63 \times 10^{-34}\text{J-s}$ .

Planck's constant defines the behaviour of particles and waves on atomic scale. S.I. unit of Planck's constant is Joule-second (J.s.).

28. In a new system of units called star units,  $1\text{kg}^* = 10\text{kg}$ ,  $1\text{m}^* = 1\text{km}$  and  $1\text{s}^* = 1\text{minute}$ , what will be the value of 1 J in the new system?
- (a)  $2.4 \times 10^{-5}\text{J}^*$  (b)  $3.6 \times 10^{-4}\text{J}^*$   
(c)  $4.2 \times 10^{-3}\text{J}^*$  (d)  $4.2 \times 10^{-2}\text{J}^*$

Ans. (b) :  $1\text{kg} = 10\text{kg}$

$$\therefore [1\text{kg} = 1/10\text{kg}]$$

$$1\text{m} = 1\text{km} \quad [\therefore 1\text{m} = 1/1000\text{m}]$$

$$1\text{m} = 1000\text{m}$$

$$1\text{s} = 1\text{minute}$$

$$1\text{sec} = 60\text{sec.} \quad [\therefore 1\text{sec} = 1/60\text{sec}]$$

$$\text{Energy} = [M^1 L^2 T^{-2}]$$

$$1\text{Joule} = 1\text{kg} \times 1\text{m}^2 \times (\text{sec})^{-2}$$

$$= \frac{1}{10}\text{kg} \times \left(\frac{1}{1000}\text{m}\right)^2 \times \left(\frac{1}{60}\text{s}\right)^{-2}$$

$$= \frac{1}{10}\text{kg} \times (10^{-3})^2 \times \left(\frac{1}{60}\right)^{-2} (\text{s})^{-2}$$

$$= \frac{1}{10} \times 10^{-6} \times (60)^2 \frac{\text{kg}(\text{m})^2}{(\text{s})^2}$$

$$\therefore 1\text{Joule} = 3.6 \times 10^{-4} \frac{\text{kg}(\text{m})^2}{(\text{s})^2}$$

29. A new unit of length is so chosen that the speed of light in vacuum is unity. Calculate the distance (in this new unit) between the sun and the earth if light takes 8 min and 20 seconds to reach earth from sun.
- (a) 300 (b) 400  
(c) 500 (d) 600

AMU-2012

Ans. (c) : Given that,

The speed of light in a vacuum is unity,

$$v = 1\text{ m/sec}$$

$$\text{Time} = 8\text{ min and } 20\text{ sec} = 500\text{ sec}$$

We know that,

$$\text{Distance} = \text{speed} \times \text{time}$$

$$\text{Distance} = 1 \times 500$$

$$\text{Distance} = 500\text{ unit}$$

Hence, distance between sun and earth is 500 unit.

30. 1 ns is defined as

- (a)  $10^{-9}\text{ s}$  of Kr- clock of 1650763.73 oscillations  
(b)  $10^{-9}\text{ s}$  of Kr- clock of 652189.63 oscillations  
(c)  $10^{-9}\text{ s}$  of Cs- clock of 1650763.73 oscillations  
(d)  $10^{-9}\text{ s}$  of Cs- clock of 9192631770 oscillations

CG PET- 2009

Ans. (d) :  $1\text{ ns} = 10^{-9}\text{ s}$  of Cs-clock of 9192631770 oscillations.

## (b) Units

31. The unit of specific resistance is

- (a)  $\text{ohm/m}^2$  (b)  $\text{ohm/m}^3$   
(c)  $\text{ohm m}$  (d)  $\text{ohm/m}$

BITSAT-2013, SCRA-1989

MPPET-1984, UCPMT-1975

Ans. (c) : We know that,

$$R = \rho \frac{l}{A}$$

$\rho$  = specific resistance

$$\rho = \frac{RA}{l}$$

$$\rho = \frac{\text{ohm} \cdot \text{m}^2}{\text{m}}$$

Unit of  $\rho$  =  $\text{ohm} \cdot \text{m}$

32. The unit of magnetic moment is

- (a)  $\text{A-m}^2$  (b)  $\text{A-m}$   
(c)  $\text{A-m}^3$  (d)  $\text{kg-m}^2$

CG PET- 2006, AMU-2002

MP PET-1996, 1989

MP PMT-2002, 1995

Ans. (a): Magnetic moment is the product of the current flowing and area.

$$M = I \times A \\ = \text{Ampere-m}^2$$

33. What is the SI unit of Stefan-Boltzmann's constant  $\sigma$ ?

- (a)  $\text{W m}^{-2} \text{K}^{-4}$  (b)  $\text{W m}^2 \text{K}^4$   
(c)  $\text{W K}^{-4}$  (d)  $\text{erg s}^{-2} \text{K}^{-4}$

COMEDK 2018, Karnataka CET - 2006

AIPMT-2002, MP PET-1992

AFMC-1986, MP PMT-1992, 1989

**Ans.(a):** According to Stefan's law, energy per unit time  
 $(E/t) = \sigma AT^4$

$$\sigma = \frac{E/t}{AT^4}$$

$$\sigma = \frac{W}{m^2 K^4}$$

$$= W m^{-2} K^{-4}$$

The SI unit of Stefan's constant =  $W \cdot m^{-2} \cdot K^{-4}$  and CGS unit is =  $Erg \cdot cm^{-2}$

### 34. Match List with List II.

List-I		List-II	
(A)	Torque	(I)	$Nms^{-1}$
(B)	Stress	(II)	$J kg^{-1}$
(C)	Latent heat	(III)	Nm
(D)	Power	(IV)	$Nm^{-2}$

Choose the correct answer from the options given below:

- (a) A-III, B-II, C-I, D-IV  
 (b) A-III, B-IV, C-II, D-I  
 (c) A-IV, B-I, C-III, D-II  
 (d) A-II, B-III, C-I, D-IV

JEE Main-29.07.2022, Shift-II

**Ans. (b)**

(A)	Torque	→	(iii)	Nm
(B)	Stress	→	(iv)	$Nm^{-2}$
(C)	Latent heat	→	(ii)	$J Kg^{-1}$
(D)	Power	→	(i)	$Nms^{-1}$

### 35. In SI units, $kg m^2 s^{-2}$ is equivalent to which of the following?

- (a) newton (b) watt  
 (c) joule (d) pascal

AP EAMCET-04.07.2022, Shift-II

**Ans. (c) :** Given unit is  $Kg M^2 s^{-2}$

Dimension of given unit is =  $[ML^2 T^{-2}]$

Dimension of work (Joule)

= Force × displacement

=  $[M^1 L^1 T^{-2}] \times [L^1]$

=  $[ML^2 T^{-2}]$

So, the SI unit of  $Kg m^2 s^{-2}$  is equivalent to Joule.

### 36. If the unit of length, mass and time each be doubled, the unit of work is increased by

- (a) 2 times (b) 4 times  
 (c) 6 times (d) No change

Assam CEE-31.07.2022

**Ans. (a)**

Dimension formula of work (W) =  $ML^2 T^{-2}$

$$= \left[ M \frac{L^2}{T^2} \right]$$

if the unit of L, M, and T are doubled, then the new unit of work

$$= (2M) \cdot \frac{(2L)^2}{(2T)^2} = 2 \left[ M \frac{L^2}{T^2} \right] = 2W$$

∴ The unit becomes two times

### 37. If E and H represent the intensity of electric field and magnetising field respectively, then the unit of E/H will be

- (a) ohm (b) mho  
 (c) joule (d) newton

JEE Main-27.08.2021, Shift-I

**Ans. (a) :** The impedance in free space ( $z_0$ ) =  $\frac{E}{H}$

Thus, unit of  $\frac{E}{H}$  is ohm.

### 38. The unit of current element is

- (a) A m (b)  $Am^{-1}$   
 (c)  $Am^2$  (d)  $Am^{-2}$

AP EAMCET-06.09.2021, Shift-I

**Ans. (a) :** The unit of current element is ampere-metre (Am).

### 39. A force 'F' is given as $F = Pt^{-1} + Qt$ , where 't' denotes time. Then, the unit of 'P' must be same as that of

- (a) Displacement (b) Velocity  
 (c) Acceleration (d) Momentum

AP EAMCET-06.09.2021, Shift-II

**Ans. (d) :** Given as  $F = Pt^{-1} + Qt$

We know that Dimensional formula of force =  $[MLT^{-2}]$

From the principle of dimensional homogeneity

$$F = Pt^{-1}$$

$$[MLT^{-2}] = P [T^{-1}]$$

So, Dimensional formula of P =  $[MLT^{-1}]$

Momentum formula =  $m \times v \Rightarrow [MLT^{-1}]$

Hence, the unit of 'P' must be same as that of momentum.

### 40. If time (t), velocity (v) and angular momentum (l) are taken as the fundamental units, then the dimension of mass (m) in terms of t, v and l is

- (a)  $[t^{-1} v^1 l^{-2}]$  (b)  $[t^1 v^2 l^{-1}]$   
 (c)  $[t^{-2} v^{-1} l^1]$  (d)  $[t^{-1} v^{-2} l^1]$

JEE Main-20.07.2021, Shift-II

**Ans. (d) :** We know,

Dimension of time (t) =  $[T]$

Dimension of velocity (v) =  $[LT^{-1}]$

Dimension of angular momentum (l) =  $[ML^2 T^{-1}]$

So,  $m \propto t^a v^b l^c$

$$m \propto [T]^a [LT^{-1}]^b [ML^2 T^{-1}]^c$$

$$ML^0 T^0 = [M]^c [L]^{b+2c} [T]^{a-b-c}$$

$$\text{So, } C = 1, \quad b + 2c = 0, \quad a - b - c = 0$$

$$b + 2 = 0$$

$$b = -2$$

$$a - b - c = 0$$

$$a + 2 - 1 = 0$$

$$a = -1$$

$$\text{So, } m \propto [t^{-1} v^{-2} l^1]$$

41. Match List-I with List-II

List-I	List-II
A. $R_H$ (Rydberg constant)	1. $\text{kg m}^{-1} \text{s}^{-1}$
B. $h$ (Planck's constant)	2. $\text{kg m}^2 \text{s}^{-1}$
C. $\mu_B$ (Magnetic field energy density)	3. $\text{m}^{-1}$
D. $\eta$ (Coefficient of viscosity)	4. $\text{kg m}^{-1} \text{s}^{-2}$

Choose the most appropriate answer from the options given below.

A	B	C	D
(a) 2	3	4	1
(b) 3	2	4	1
(c) 4	2	1	3
(d) 3	2	1	4

JEE Main-27.08.2021, Shift-II

Ans. (b) : Unit of Rydberg constant ( $R_H$ ) =  $\text{m}^{-1}$   
 Unit of plank's constant ( $h$ ) =  $\text{kg m}^2 \text{s}^{-1}$   
 Unit of magnetic field energy density ( $\mu_B$ ) =  $\text{kg m}^{-1} \text{s}^{-2}$   
 Unit of coefficient of viscosity =  $\text{kg m}^{-1} \text{s}^{-1}$   
 So, option (b) is correct.

42. Which of the following is not a unit of time?

- (a) Lunar month (b) Light year  
 (c) Leap year (d) Microsecond

AP EAMCET (23.09.2020) Shift-I

Ans. (b) Lunar month, leap year and microsecond are the units of time but light year is the unit of distance and it is used to measure astronomical distance.

43. The unit of magnetic induction is

- (a)  $\text{Wb m}^{-2}$  (b)  $\text{Wb m}^{-1}$   
 (c)  $\text{Wb A}$  (d)  $\text{Wb}$

AP EAMCET (21.09.2020) Shift-I

Ans. (a) :  $\therefore$  Magnetic Induction =  $\frac{\text{Magnetic flux}}{\text{Area}}$   
 $\therefore$  The unit of magnetic induction =  $\frac{\text{Weber}}{\text{meter}^2} = \text{Wb.m}^{-2}$

44. The SI unit of length is 'meter' suppose we adopt a new unit of length which equals  $x$  meter. Then, the area of  $1 \text{ m}^2$  expressed in terms of new unit has a magnitude

- (a)  $x$  (b)  $x^2$   
 (c)  $\frac{1}{x}$  (d)  $\frac{1}{x^2}$

AP EAMCET (21.09.2020) Shift-I

Ans. (d) : Given,  
 SI unit of length = meter (m)  
 New unit of length =  $x$  meter

And,  $1\text{m} = \frac{1}{x}$  (New units)

Hence,  
 $\text{Area} = 1\text{m}^2$   
 $A = 1 \times 1\text{m}^2$   
 $= \frac{1}{x} \times \frac{1}{x} = \frac{1}{x^2}$

45. The S.I unit of inductance is

- (a)  $\text{Kg. m}^2. \text{S}^{-2}. \text{A}^{-2}$  (b)  $\text{Kg. S}^{-2}. \text{A}^{-1}$   
 (c)  $\text{Kg. m}^2. \text{S}^{-2}. \text{A}^{-1}$  (d)  $\text{Kg. m}^2. \text{S}^{-3}. \text{A}^{-2}$

TS EAMCET 29.09.2020, Shift-I

Ans. (a): Inductance: -

Electromagnetic or magnetic induction is - the production of an electromotive force across an electrical conductor in a changing magnetic field.

$$v = L \times \left( \frac{di}{dt} \right)$$

$L$  = value of Inductance (H)

$i$  = current

$t$  = time

Henry (H) is - the SI unit of inductance

$$[\text{Volt}] = [L] \left[ \frac{\text{Ampere}}{\text{second}} \right]$$

This can be written as-

$$[L] = \left[ \frac{\text{Volt-second}}{\text{ampere}} \right]$$

$$[L] = \left[ \frac{\text{Joule}}{\text{Ampere}^2} \right]$$

$$[L] = \left[ \frac{\text{kg m}^2 \text{S}^{-2}}{\text{A}^2} \right]$$

$$[L] = \text{Kg m}^2 \text{S}^{-2} \text{A}^{-2}$$

46. The unit of  $L/R$  is (where  $L$  = inductance and  $R$  = resistance)

- (a) sec (b)  $\text{sec}^{-1}$   
 (c) volt (d) ampere

Manipal UGET-2019

$$\text{Ans. (a) : } \frac{L}{R} = \frac{\text{Henry}}{\text{ohm}} = \frac{\left( \frac{\text{volt}}{\text{A/S}} \right)}{\text{ohm}} = \frac{\text{volt.sec}}{\text{ohm.ampere}}$$

$$\frac{L}{R} = \text{sec}$$

•  $L/R$ ,  $CR$  and  $\sqrt{LC}$  all have dimensions of Time [T]. So unit will be second.

47. Unit of Magnetic Flux is:

- (a) Tesla (b) Gauss  
 (c) Weber (d)  $\text{Weber/m}^2$

AIIMS-26.05.2019(E) Shift-2

Ans. (c) : The SI unit of magnetic flux is weber (Wb). Weber is commonly expressed in a multitude of other units.

$$\text{Wb} = \frac{\text{kg.m}^2}{\text{s}^2.\text{A}} = \text{V.s} = \text{H.A} = \text{T.m}^2 = \frac{\text{J}}{\text{A}} = 10^8 \text{mx}$$

where,

Wb = Weber s = second

T = Tesla H = Henry

V = volt A = Ampere

J = joule Mx = Maxwell

48. If P, Q and R are physical quantities having different dimensions, which of the following combination can never be a meaningful quantity?

- (a)  $\frac{P-Q}{R}$  (b)  $PQ-R$   
(c)  $\frac{PQ}{R}$  (d)  $\frac{PR-Q^2}{R}$

Karnataka CET-2019

**Ans. (a):** P, Q and R are physical quantities having different dimensions. By the principle of homogeneity, the physical quantities having different dimensions, can not be added or subtracted directly.

Hence,  $\frac{P-Q}{R}$  is not a meaningful quantity.

49. SI unit of inductance is

- (a) Ampere (b) Ohm  
(c) Henry (d) Faraday

J&K-CET-2019

**Ans. (c):** SI unit of inductance is Henry. Inductance is the tendency of an electrical conductor to oppose a change in the electric current flowing through. It is denoted by H.

50. The unit of relative permittivity is

- (a)  $C^2N^{-1}m^{-2}$  (b)  $Nm^2C^{-2}$   
(c) unitless (d)  $NC^{-2}m^{-2}$

SRMJEE-2019

**Ans. (c):** Relative permittivity ( $\epsilon_r$ ) =  $\frac{\epsilon}{\epsilon_0}$

As it is the ratio of permittivities hence, it has no unit.

51. Which of the following is both unitless and dimensionless?

- (a) Angle  
(b) Solid angle  
(c) Mechanical equivalent of heat  
(d) Refractive index

SRMJEE-2019

**Ans. (d):** Refractive index is the property of a material to bend light when passing through one medium to another medium.

The ratio of the speed of light in a vacuum to the speed of light in a medium is called the refractive index of that medium.

Reflective index ( $\eta$ ) =  $\frac{\text{Speed of light in vacuum (c)}}{\text{Speed of light in medium (v)}}$

Since it is the ratio of speed, it has no dimension or units.

52. The C.G.S. unit of magnetic field at a point, due to Biot-Savart law is

- (a) Tesla (b) Gauss  
(c) Tesla meter/Amp (d) Newton/Amp

J&K-CET-2019

**Ans. (b):** The Gauss is the CGS unit for the measurement of magnetic field (B) which is also called the magnetic flux density or the magnetic induction.

1 Gauss =  $1 \times 10^{-4}$  Tesla

The C. G. S. unit of magnetic field at a point is Gauss.

53. In a system, unit of mass is A kg, length is B m and time is C s, then the value of 10 N in this system is

- (a)  $10 A^{-1} B^{-1} C^{-2}$  (b)  $10 A^{-1} B^{-1} C^2$   
(c)  $10 ABC^{-2}$  (d)  $5 A^{-1} BC^2$

AP EAMCET (22.04.2018) Shift-1

**Ans. (b):** We know that,  $N_1 u_1 = N_2 u_2$

$$10 \text{ kg} \frac{\text{m}}{\text{s}^2} = N_2 \left( \frac{A \cdot B}{C^2} \right)$$

$$\Rightarrow N_2 = \frac{10 \cdot C^2}{A \cdot B} = 10 A^{-1} B^{-1} C^2$$

So, numerical value of 10N in given system is  $10 A^{-1} B^{-1} C^2$ .

54.  $\text{kg m}^2 \text{s}^{-3} \text{A}^{-2}$  is the SI unit of

- (a) Inductance (b) Resistance  
(c) Capacitance (d) Magnetic flux

AP EAMCET-25.04.2018, Shift-2

**Ans. (b):** Given that,

$$\text{Kg m}^2 \text{s}^{-2}$$

Dimensional formula of given unit is =  $[ML^2T^{-3}A^{-2}]$

$$\begin{aligned} \text{Resistance} &= \frac{\text{Voltage}}{\text{Current}} \\ &= \frac{[M^1L^2T^{-3}A^{-1}]}{[A]} \\ &= [M^1L^2T^{-3}A^{-2}] \end{aligned}$$

So, the dimensional formula of given unit is equal to the resistance.

55. Dioptre is the unit of

- (a) Power of lens (b) focal length  
(c) Ionosphere (d) None

HP CET-2018

**Ans. (a):** Dioptre is the unit of power of lens and it is reciprocal of focal length.

$$P = \frac{1}{f} \text{ (where f in meters)}$$

56. Which of the following is not the unit of surface tension?

- (a)  $\frac{N}{m}$  (b)  $\frac{J}{m^2}$   
(c)  $\frac{kg}{s^2}$  (d)  $\frac{W}{m}$

UPSEE - 2018

**Ans. (d):** The surface tension is a measure of force per unit length.

S.I unit = N/m

or  $\text{kg/s}^2$  or  $\text{J/m}^2$

Only option (d)  $\frac{W}{m}$  is not the unit of surface tension.

57. The unit of Polarizability of the molecule is

- (a)  $C^2m^1N^{-1}$  (b)  $C^{-2}m^{-1}N^1$   
(c)  $C^2m^1N^{-1}$  (d)  $C^2m^{-1}N^{-1}$

GUJCET 2018