SIR C R REDDY COLLEGE FOR WOMEN
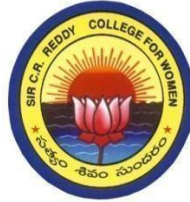
(Affiliated to AdikaviNannaya University,

PG ENTRANCE COACHING

For

M.Sc., (physics)

Date: **28-April-2023 to 27-may -2023**

Time: **8:30 am to 9:30 am**

&

4.30pm to 5.30pm

Organized by

CAREER GUIDANCE & PLACEMENT CELL
2022-2023

INDEX

About Programme

The Career Guidance and Placement Cell at Sir CR Reddy College for Women organized PG entrance coaching classes in Mathematics,. These classes were conducted by senior faculty members who specialize in the respective subjects at the college.

Program: PG Entrance Coaching for Subject

Subjects Covered:

- M.Sc. (Physics)

Target Audience:

- III B.Sc. students aspiring for postgraduate studies (M.Sc.)

- **Duration:**

- April28th 2023, to May 27st ,2023(30days)

Time:

- 8:30 AM to 9:30 AM & 4.30PM to 5.30PM

Resource Persons:

K.SIRISHA(HOD),

M.JAYA LAKSHMI DEVI

Organized By:

- Career Guidance and Placement Cell at Sir CR Reddy College for Women

Resource Persons

K.SIRISHA(HOD),

M.JAYA LAKSHMI DEVI

Program Overview:

- Specifically designed coaching program focusing on APPGCETCET 2023for M.Sc. aspirants.

- Conducted by seasoned faculty members from Sir CR Reddy College, each specializing in PHYSICS.

- Comprehensive curriculum comprising subject-specific lectures, problem-solving sessions, practice tests, and exam strategy workshops.

- Tailored content to acquaint students with the APPGCET exam pattern, syllabi, and effective preparation methodologies.

Benefits for III B.Sc. Students:

- Early guidance and preparation assistance for M.Sc. entrance exams.

- Exposure to exam patterns, aiding in better preparedness.

- Access to experienced faculty for subject-specific guidance and doubt resolution.

- Enhanced readiness for M.Sc. studies by initiating preparation in advance.

This coaching program aims to support B.Sc. students in their aspirations for pursuing postgraduate studies by providing structured coaching specifically aligned with the requirements of the APPGCET 2023 examination.

Learning Objectives and Learning Outcomes

Learning Objectives:

1. Subject Mastery: To facilitate a comprehensive understanding of the core concepts and subject-specific knowledge required for M.Sc. entrance exams.
2. Exam Familiarity: To familiarize students with the exam pattern, question types, and syllabi specific to APPGCETCET 2023.
3. Problem-Solving Skills: To enhance problem-solving abilities and critical thinking necessary to tackle complex questions in the entrance exams.
4. Time Management: To equip students with effective time management strategies for the exam and optimize their performance within the stipulated time frame.
5. Exam Strategy: To provide guidance on effective exam strategies, including question selection, prioritization, and efficient answering techniques.

Expected Outcomes:
1. Strong Foundation: Students are expected to build a strong foundational understanding of their respective subjects, providing a basis for advanced studies.
2. Improved Performance: Enhanced problem-solving skills and a better grasp of exam patterns can result in improved performance in mock tests and the actual entrance exam.
3. Confidence: Through regular practice and guidance, students are likely to gain confidence in handling diverse questions and scenarios during the examination.
4. Effective Preparation: Students should be better prepared to face the challenges of the entrance exams by utilizing learned strategies and subject-specific knowledge.
5. Readiness for Postgraduate Studies: The coaching program aims to prepare students adequately for the rigors of postgraduate studies in their chosen fields.

Permission Letter

18-04-2023
Eluru

To
The Principal
Sir C.R.Reddy College for Women
Eluru

Subject: Request to grant permission to conduct P.G Entrance test Coaching Classes to final year students.
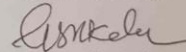
This is to bring to your kind notice that, Career Guidance and Placement Cell is planning to conduct P.G Entrance test Coaching Classes for interested III B.Sc/B.Com students specializing life Sciences, Mathematics, Physics, Chemistry, Commerce .

The coaching classes aim is to provide additional support and guidance to our ambitious students who aspire to excel in their respective fields and we believe that providing coaching classes with in our college will not only benefit our students but also contribute to the overall academic excellence of our institution. These classes will be conducted for about 30 days i.e., from 28th April 2023 to 27th May 2023. The duration of these classes will be from 8:30 am to 9:30 am and 4:30 pm to 5:30 pm. I kindly request your approval for this initiative, as it aligns with our commitment to fostering academic excellence and preparing our students for successful futures.

Thanking you Madam,

Permitted

Principal
Sir C.R.Reddy College for Women
ELURU

Yours Faithfully,
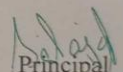
(Coordinator)
Career Guidance and Placement Cell

Notice to students

NOTICE

20-04-2023

This is to inform you all that Career Guidance and placement Cell arranged P.G Entrance Test Coaching Classes for interested III B.Sc/B.Com students specializing life Sciences, Mathematics, Physics, Chemistry, Commerce. These Classes will be held within the college at Seminar Hall from 28th April 2023 to 27th May 2023 running from 8:30 am to 9:30 am and 4:30 pm to 5:30 pm. This initiative aims to enhance your preparation for P G Entrance Test offering personalized guidance to help you excel in the examination. These sessions will provide valuable insights and guidance.
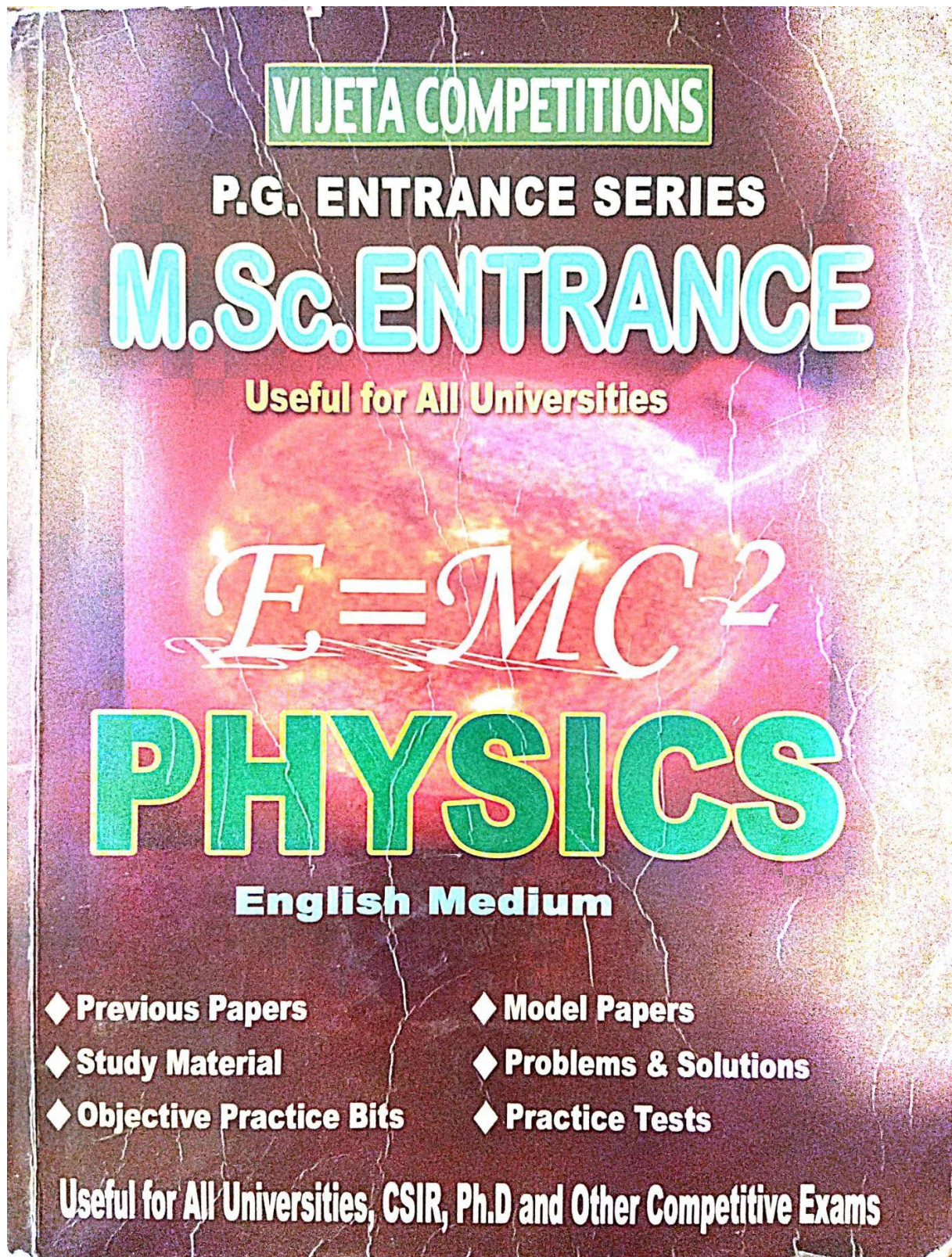
We encourage all interested candidates to attend and take advantage of this valuable opportunity.

Principal

Principal
Sir C.R.Reddy College for Women
ELURU

Course Structure

1. Thermodynamics

2. Low temperature physics

3. Quantum theory of radiation

4. Mechanics& oscillations

5. Vectors

6. Optics

7. Electricity and Magnetism

8. Modern physics and Electronics

9. Fluid mechanics

10. Special theory of relativity

VIJETA COMPETITIONS

P.G. ENTRANCE SERIES

M.Sc. ENTRANCE

Useful for All Universities

$E = MC^2$

PHYSICS

English Medium

◆ Previous Papers
◆ Study Material
◆ Objective Practice Bits

◆ Model Papers
◆ Problems & Solutions
◆ Practice Tests

Useful for All Universities, CSIR, Ph.D and Other Competitive Exams

INDEX

1.5. FLUID DYNAMICS

★ The fluids can be divided into two parts depends on pressure.

1. **Liquids:** which are incompressible (volume can't change)

2. **Gases:** which are compressible (volume can change)

★ **Characteristics of fluids:**

1. Fluids can flow may be steady or nonsteady.

2. Fluids flow may be rotational or inrotational.

3. Fluids flow may be compressible or incompressible.

4. Fluids flow may be viscous and nonviscous.

★ **Stream line flow:** The fluid flow is such that velocity at any point of every particle is constant in time, the flow is known as steady or stream line flow.

★ **Turbulent flow:** The flow of fluid in which velocity of all particles crossing a given point is not same and becomes disorderly or irregular, is called turbulent flow.

★ **Viscosity:** The property of a fluid by virtue of which an opposing force comes into play whenever there is a relative flow between the different layers of the fluid or liquid is called viscosity.

★ **Coefficient of Viscosity:** Coefficient of viscosity of a liquid is defined as the viscous drag acting per unit area of the layer having unit velocity gradient perpendicular to the direction of the flow.

It is denoted by $\eta = {}^{F}/_{A} \frac{dV}{dn}$

**Applications:** Viscosity of various liquids and gases have the following applications.

1. Liquids at high viscosity are used in shock absorbers and buffers at railway stations.

2. Used to damp the motion at some instruments.

3. Used in determining the molecular weight and shape of the organic molecules.

4. Lubricants (different) are made depending upon season.

★ **Equation of continuity:** The velocity of the fluid is inversely proportional to the area of cross section i.e., larger is the cross sectional area smaller would be the velocity of flow and vice-versa.

Let α_1, V_1, and ρ_1 be the area of cross section of the tube, velocity of flow of the liquid particles and density of the liquid at point A, similarly α_2, V_2 and ρ_2 be the of cross section of the tube, velocity of flow of the liquid particles and density of the liquid at the point B.
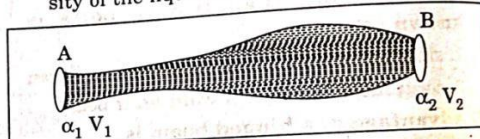
★ The flow is steady or incompressible i.e., $\rho_1 = \rho_2 = \rho$. Therefore $\alpha_1 V_1 \rho_1 = \alpha_2 V_2 \rho_2$

$\alpha V =$ constant

Differential form of equation of continuity:

$\nabla . \vec{V} = 0$

$\left[\vec{V} = i \frac{d}{dx} + j \frac{d}{dy} + k \frac{d}{dz} \text{ and } \vec{V} = iV_x + jV_y + kV_z \right]$

The statement of equation of continuity for an incompressible fluid flow.

BERNOULLI'S THEOREM

★ When an incompressible and non-viscous fluid-flow in stream lined motion from one place to another, then at every point of its path.

The total energy per unit volume is constant.

Pressure energy + kinetic energy + potential energy = constant.

$\rho + \frac{1}{2}\rho V^2 + \rho g h =$ constant.

under low pressure, the tubes and fins get cooled

* **Applications of low temperature:**
  1. Production of high Vacuum.
  2. Separation of constituents of air.

3. Vapourisation calorimeters.
4. O_2 and N_2 are being produced from liquid air.
5. It is also used in manufacturing explosives
6. The liquid O_2 is stored up in cylinders for artificial respiration.

PROBLEMS & SOLUTIONS

1. A refrigerator works under a irreversible cycle between the temperatures 300k and 400K. Calculate i) the thermal efficiency ii) the coefficient of performance.

Sol: i. Thermal efficiency $\eta = 1 - \dfrac{T_2}{T_1} = 1 - \dfrac{300}{400}$

$$= 0.25 \text{ or } 25\%$$

ii. The coefficient of performance,

$$\beta = \frac{\theta_2}{W} = \frac{T_2}{T_1 - T_2} = \frac{300}{400 - 300} = 3$$

2. For one mole of hydrogen, the Vander Waal's constants $a = 0.245 \dfrac{Lt^2 \times atoms}{mole^2}$; $b = 2.67 \times 10^{-1}$ lt mole^{-1}, calculate its temperature of inversion. R = 2 cal/mole K

Sol: The temperature of inversion T_i is

$$T_i = \frac{2a}{Rb}$$

$$T_i = \frac{2 \times 0.245 \times 10^{12}}{2 \times 4.2 \times 10^7 \times 26.7} = 220 \text{ K}$$

OBJECTIVE BITS

1. In the porous plug experiment, the temperature of the gas increases after throttling. The correct range for the initial temperature of the gas for this to happen is
   1. Critical temperature to Boyle's temperature
   2. Boiling temperature to critical temperature
   3. Below inversion temperature
   4. (2) and (3)

2. The equation $\left(\dfrac{dP}{dT}\right)_g = \dfrac{S}{V}$, where P is pressure, S is specific entropy of liquid helium and V is specific volume, is known as
   1. Joule – Thomson effect equation
   2. Joule – Kelvin effect equation
   3. Fountain effect equation
   4. (1) & (2)

3. Cooling is possible when
   1. $T_i = \dfrac{2a}{2b}$ 2. $T_i > \dfrac{2a}{Rb}$
   3. $T_i < \dfrac{2a}{Rb}$ 4. $T_i \leq \dfrac{2a}{2b}$

4. Joule-Thomson cooling is
   1. Temperature independent
   2. Temperature dependent
   3. Inversely proportional to molecular weight
   4. Dependent on the total mass of gas

5. The Clapeyron's equation $\dfrac{L}{V_2 - V_1} = T\left(\dfrac{dP}{dT}\right)_v$ can be derived from
   1. $\left(\dfrac{dS}{dV}\right)_T = \left(\dfrac{dP}{dT}\right)_V$
   2. $\left(\dfrac{dP}{dV}\right)_T = \left(\dfrac{dP}{dT}\right)_V \left(\dfrac{dT}{dV}\right)_P$
   3. $\left(\dfrac{dC_p}{dP}\right)_T = -T\left(\dfrac{dv}{dT^2}\right)$ 4. None of the above

6. The following processes are used for cooling
   1. Evaporation
   2. Adiabatic demagnetization
   3. Adiabatic expansion compressed gas
   4. (2) & (3) only

7. The dimensions of the constant b in Vander waal's gas equation are that of
   1. Volume   2. Pressure
   3. Volume × Pressure   4. Volume / Pressure

8. According to Vander Waal's gas equation critical co-efficient $\dfrac{R\,T_c}{P_c\,V_c}$ is equal to
   1. 1   2. 8/3
   3. 8   4. 3:1

10

★ Sum of the static and dynamic pressure is constant. i.e., $P + \frac{1}{2}PV^2 = $ constant; $\frac{1}{2}PV^2$ is constant.

★ **Applications:**
1. Lift of an airfoil
2. The sprayer
3. Spinning of a ball
4. Bunsen burner
5. Pitot tube
6. carburettor
7. Vacuum brake
8. Venturimeter
9. Torricelli's theorem

TORRICELLI'S THEOREM

★ The velocity of efflux of a liquid through an orifice is equal to that which a body would acquire in falling freely from the free surface of liquid to the orifice.

According to Bernoulli's theorem.

The sum of the pressure and the total energy per unit volume of the liquid must be the same at the free surface and at every point of the orifice.

$\Rightarrow P + 0 + PgH = P + \frac{1}{2}PV^2 + Pg(H-h)$

$\Rightarrow \frac{1}{2}PV^2 = Pgh$

$\Rightarrow V = \sqrt{2gh}$

★ The rate of flow of water through circular orifice is $0.62\, a\sqrt{2gh}$. Where 'a' is area of cross section.

★ **Pitot tube:** To determine the velocity of flow of the liquid in tube, rivers and streams etc., it is measured by using $V = \sqrt{2gh}$, where 'h' is the height difference between arms of pitot tube and 'g' is acceleration due to gravity.

Venturimeter: Venturimeter is a guage put on a flow pipe to measure the rate of flow of a liquid through a pipe. According to Bernoulli's theorem, velocity of flow of liquid at point A is

$$V_1 = \left[\frac{2A_2{}^2(P_1 - P_2)}{P(A_1{}^2 - A_2{}^2)}\right]^{\frac{1}{2}} \text{ and}$$

Velocity of flow of liquid at point B is

$$V_2 = \left[\frac{2A_2{}^2(P_1 - P_2)}{P(A_1{}^2 - A_2{}^2)}\right]^{\frac{1}{2}}.$$

═ PROBLEMS & SOLUTIONS ═

1. Water enters a horizontal pipe of non-uniform cross-section with a velocity of 0.4 m/s and leaves the other end with a velocity of 0.6 m/s, pressure of water at the first end is 1500 N/m². Then calculate the pressure of water at other end.

Sol: The horizontal flow of liquid.

$P_1 + \frac{1}{2}\rho V_1^2 = P_2 + \frac{1}{2}\rho V_2^2$

$P_2 = P_1 + \frac{1}{2}\rho(V_1^2 - V_2^2)$

Where, $P_1 = 1500$, $V_1 = 0.4$, $V_2 = 0.6$

$P_2 = 1500 + \frac{1}{2} \times 10^3 \times (0.16 - 0.36)$

$P_2 = 1500 - 100 = 1400$

$P_2 = 1400 \text{ N/m}^2$

2. A bent tube is lowered into a water stream. The velocity of the stream relative to the tube is equal to V = 2.5 m/s. The closed upper end of the tube located at the height $h_o = 12$ cm has a small orifice. To what height h will the water jet spurt.

Sol: The K.E at the lower end is converted into pressure and again pressure energy converted into K.E.

$\frac{1}{2}\rho V^2 = h_o\, \rho g + \rho(V^1)^2$

$\therefore V^1 = \sqrt{\dfrac{\rho V^2 - 2h_o\rho g}{\rho}}$

or $V^1 = \left[V^2 - 2gh_o\right]^{1/2}$ .... (1)

$h = \dfrac{(V^1)^2}{2g}$ .... (2)

From (1) and (2) then we get

$h = \dfrac{(V^1)^2}{2g} - h_o$ .... (3)

$h = \dfrac{(2.5)^2}{2 \times 9.8} - 0.12$

$h = 0.20 \text{ m}$

9. Joule–Thomson co-efficient is given by

1. $\mu = \dfrac{1}{C_p} \left[T \left(\dfrac{dV}{dP} \right)_T - V \right]$

2. $\mu = \dfrac{1}{C_p} \left[T \left(\dfrac{dV}{dT} \right)_P + V \right]$

3. $\mu = \dfrac{1}{C_p} \left[T \left(\dfrac{dV}{dT} \right)_P - V \right]$

4. $\mu = J\, C_p \left[T \left(\dfrac{dV}{dT} \right) - V \right]$

10. The Vanderwaal's constants a and b for 1 gram molecule of hydrogen are a = 0.245 atm lt² mole⁻². Then calculate the critical, constants of the gas.

1. $T_c = 239°C$
   $V_c = 8.01 \times 10^{-2}$ kg
2. $T_c = -239.82°C$
   $V_c = 8.01 \times 10^{-2}$ kg
3. $P_c = 13.12$ Atm
4. (2) & (3) only

11. Calculate the critical temperature of helium given the following values for critical constants a = 615 × 10⁻⁵, b = 995 × 10⁻⁴; where the units of pressure is the atmosphere and the unit of volume, the gram molecular volume of gas at NTP.
   1. –268°C   2. 5K
   3. 5°C   4. (1) & (2)

12. The temperature of inversion of hydrogen and helium are
   1. –80°C, –240°C   2. –80°K, –240°K
   3. 80°C, 240°K   4. (1) & (2) only

13. In a porous-plug experiment, the change in temperature of the gas depends upon
   1. Its thermal conductivity
   2. The difference in pressure on either side of the plug
   3. Its specific heat
   4. None of the above

ANSWERS

| 1.4 | 2.3 | 3.3 | 4.2 | 5.1 | 6.4 | 7.1 | 8.2 | 9.3 | 10.4 | 11.4 | 12.1 | 13.2 |

1.1. VECTORS

* **Scalar quantity:** A physical quantity which has only magnitude is called scalar.

  Ex: Mass, temperature, speed, etc.

* **Vector quantity:** A physical quantity having both magnitude and direction.

  Ex: Velocity, momentum, acceleration, force, etc.

* **Sum of scalars:** The sum of two scalars is a scalar quantity.

* **Null vector:** The vector whose origin and terminus, is same is called null vector or zero vector. Its magnitude is zero and direction is indeterminate.

* **Unit vector:** The vector having unit magnitude is called unit vector.

  If $\vec{A}$ is the vector, then its unit vector $\hat{a} = \dfrac{\vec{A}}{|\vec{A}|}$

Note: 1. The unit vector which is perpendicular to the plane containing vectors $\vec{A}$ & $\vec{B}$ is

$$\hat{c} = \dfrac{\vec{A} \times \vec{B}}{|\vec{A} \times \vec{B}|}$$

2. 'O' is origin, P(x, y, z) then the unit vector parallel to $\overrightarrow{OP} = x\vec{i} + y\vec{j} + z\vec{k} / \sqrt{x^2 + y^2 + z^2}$

* Displacement, velocity, acceleration, momentum, force, impulse, intensity of electric field, moment of magnetisation, magnetic induction .... etc., these vectors are called real or polar vectors.

* Torque, angular momentum, angular velocity .... etc., these vectors are called axial vectors.

* **Triangular law:** If two vectors are represented in magnitude and direction by the two sides of a triangle taken in order, the resultant vector is represented in magnitude and direction by the third side of triangle taken in reverse order.

* **Parallelogram law:** If two vectors are represented in magnitude and direction by the two adjacent sides of a parallelogram drawn from a point, their resultant is represented in magnitude and direction by the diagonal passing through the same point.

Parallelogram
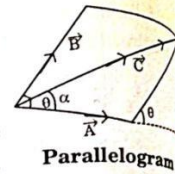
* If the angle between two vectors $\vec{A}$ & $\vec{B}$ is then resultant vector,

  $C^2 = A^2 + B^2 + 2AB \cos\theta$.

  or $C = \sqrt{A^2 + B^2 + 2AB \cos\theta}$

  If the resultant $\vec{C}$ makes an angle α with the direction $\vec{A}$, then

  $\alpha = \tan^{-1}\left[\dfrac{B \sin\theta}{A + B \cos\theta}\right]$

Cases:

i. If $\vec{A}$ & $\vec{B}$ are in same direction, $\theta = 0°$

$$|\vec{A} + \vec{B}| = |\vec{A}| + |\vec{B}|$$

ii. If $\vec{A}$ & $\vec{B}$ are in opposite direction, $\theta = 180°$

$$|\vec{A} + \vec{B}| = |\vec{A}| - |\vec{B}|$$

iii. If $\vec{A}$, $\vec{B}$ are in perpendicular directions and $|\vec{A}| = |\vec{B}|$ then $|\vec{A} + \vec{B}| = \sqrt{2}\,A$

iv. $|\vec{A}| = |\vec{B}|$ then $|\vec{A} + \vec{B}| = 2A \cos\theta/2$

* **Polygon law:** If no.of vectors are represented in magnitude and direction by the sides of polygon taken in order, the resultant is represented in magnitude and direction by the closing side of the polygon taken in reverse order.

* **Scalar product of two vectors (DOT product)**

  The scalar or DOT product of two vectors $\vec{A}$ and is defined as the product of the magnitude of vectors and the cosine of the angle between them.

  1. If A, B are two vectors then their dot product $\vec{A}.\vec{B} = |\vec{A}|.|\vec{B}| \cos\theta$

  2. Commutative law $\vec{A}.\vec{B} = \vec{B}.\vec{A}$

13

9) A condenser of capacity 10µF is charged to a potential of 1000V, then the energy stored in the condenser
1) 5J   2) 10J   3) 15J   4) 20J

10) An infinitely long conductor carries a current of 100mA. What is the magnetic field a point 0.1m away from it.
1) 0.0795Amp/m   2) 0.1043Amp/m
3) 0.1591Amp/m   4) 2×10^{-7}

11) A coil wire of certain radius has 600 turns and self-inductance 100 mH. What will be the self-inductance of a similar coil with 500 turns.
1) 69.4 mH   2) 75 mH
3) 83.3 mH   4) 100 mH

12) The amount of field energy passing in unit time through unit area of the surface perpendicular to the direction of propagation of energy is called
1) Hall effect
2) Electromagnetic energy
3) Steady current 4) Poynting vector

13) In the experiment of determination of the charge on the electron in Millikan's method, oil used because
1) To eliminate error due to evaporation
2) Small drops can be formed
3) The surface tension is more for the oil
4) To eliminate error due to usage of stokes formula for bigger spheres also

14. The dielectric constant of a medium is 1, Electric field in the dielectric is 10^6 V/m then its polarization
1) 27×10^{-6} cm^{-2} 2) 36×10^{-6} cm^{-2}
3) 51×10^{-6} cm^{-2} 4) 0

15. A spherical drop of water carrying a charge of 3×10^{-6} C has a potential of 1000V at its surface. What is the radius of the drop
1) 108 m   2) 54 m
3) 27 m   4) 12 m

16. By using the laws of bodean Algebra
$$AB - ABC + \overline{A}B + A\overline{B}C = 0$$
1) B + AC   2) A(B + C)
3) A + BC   4) AB + BC + CA

17. The ripple factor of a bridge rectifier is
1) 1.21   2) 1.11   3) 0.812   4) 0.48

18. The minority and majority carriers p-type semi conductor are
1) Holes and Electrons
2) Electrons and Holes
3) Holes only   4) Electrons only

19. The process of getting back audio signal from modulated wave is–
1) Detection   2) Rectification
3) Amplification 4) Oscillation

20 In digital electronics, the following circuit belongs to
1) Ex-OR gate   2) NAND gate
3) NOR gate   4) OR gate
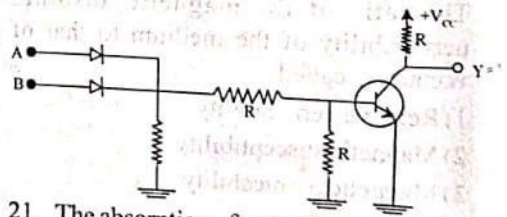
21. The absorption of γ rays by matter at higher energies is almost
1) Compton absorption
2) Pair production
3) Photoelectric absorption
4) None of these

22. An alpha particle of mass 6.65×10^{-27} kg and positive charge twice that of an electron at right angles to a magnetic field with a velocity of 3×10^5 m/sec. If the flux density of field is 0.2 W/m^2. The force acting on the alpha particle is–
1) Zero
2) 6.65×10^{-27}N
3) 1.92×10^{-14}N 4) 8.32×10^{-28}N

23. Xenon having - Isotopes
    1) 1   2) 3   3) 5   4) 9

24. The packing fraction is - for elements with mass number between 20 and 200
    1) Positive   2) Negative
    3) Zero   4) None of these

25. In a crystal, a lattice plane cuts intercepts of 2a, 3b and 6c along the three axes where a, b, c, are primitive vectors of the unit cell. The miller indeces of the given plane is
    1) (3 2 1)   2) (2 3 6)
    3) (2 $\bar{3}$ 3)   4) (1 2 3)

26. Example of Anti Ferromagnetism
    1) MnS 2) Zn   3) Fe_3O_4 4) Bi

27. The time independent schrodinger's wave equation is
    1) $\nabla^2 \psi + \dfrac{2m}{\hbar^2}(E+v)\psi = 0$

    2) $\dfrac{-\hbar^2}{2m}(\nabla^2 + v)\psi = \hbar\dfrac{\partial\psi}{\partial t}$

    3) $\nabla^2 \psi + \dfrac{2m}{\hbar^2}(E-V)\psi = 0$

    4) $\dfrac{-\hbar^2}{2m}(\nabla^2 + V)\psi = 0$

28. Positron is a
    1) Anti-electron 2) Anti-proton
    3) Anti-neutron
    4) Anti-charged K meson

29. In the hydrogen spectrum Lyman Series lies in the
    1) Visible region 2) UV region
    3) Micro wave region
    4) Infrared region

30. For a tricline Crystal system
    1) $a = b \neq c$ $\alpha = \beta = \gamma = 90^0$
    2) $a = b = c$ $\alpha = \beta = \gamma \neq 90^0$

    3) $a = b \neq c$ $\alpha = \beta = 90^0$ and $\gamma = 120^0$
    4) $a \neq b \neq c$ $\alpha \neq \beta \neq \gamma \neq 90^0$

31. The thereshold wavelength of sodium is 5045 $\overset{0}{A}$ then its work function is–
    1) 6.619×10^{-19} J 2) 3.936×10^{-21} J
    3) 7.432×10^{-19} J 4) 12.495×10^{-19} J

32. If the uncertainity in the position of an electron is 2×10^{-10}m, then the uncertainity in its momentum is
    1) 6.62×10^{-30} kg - m/sec
    2) 4.32×10^{-30} kg - m/sec
    3) 3.31×10^{-24} kg - m/sec
    4) zero

33. The disintegration constant (λ) of radiactive element is 0.00231 per day, then its half-life
    1) 5.3 years   2) 432.9 days
    3) 300 days   4) 87 days

34. What is the compton shift for an X-ray photon if it is scattered at an angle of 60^0 by electron
    1) 0.0121 $\overset{o}{A}$ 2) 0.0242 $\overset{o}{A}$
    3) 0.0432 $\overset{o}{A}$ 4) 0.1041 $\overset{o}{A}$

35. Einstein equation of photoelectric effect is
    1) $E = mc^2$ 2) $E = h\nu$
    3) $E = (m - m_0)C^2$
    4) $h\nu = \frac{1}{2}mv^2 + \phi$

36. The radius of Holmium (Ho^{165}) is 7.731 Fermi, then the radius of Helium (He^4) is
    1) 26.71 Fermi   2) 18.24 Fermi
    3) 15.71 Fermi   4) 2.23 Fermi

37. The dispersion of positive ions in Aston's mass spectrograph is due to the applied
    1) Magnetic field 2) Electric field
    3) Both electric and magnetic fields
    4) None of these

STUDENTS LIST

SIR C.R.REDDY COLLEGE FOR WOMEN, ELURU

APPGCET COACHING
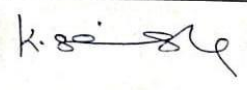
2022-2023

SUB: PHYSICS

ATTENDANCE SHEET

S.NO	ROLL.NO	NAME OF THE STUDENT	CLASS	SIGNATURE OF THE STUDENT
1	200101	G.UMA MEGHANA	MPC	G.Uma Meghana
2	200103	M.HIMA GANGA	MPC	M. Hima Ganga
3	200104	N.DEEPIKA	MPC	A.Naga Ganga Deepika
4	200105	A.NAGA DURGA	MPC	A. Nhga Durga.
5	200135	K.SAHNAVI	MPC	K. Sahnavi
6	200143	M.VENKATA SATYA	MPC	M. Venkata satya.
7	200145	N.B.L SIRISHA	MPC	N.B.L Sirisha
8	200146	P.N.V SOWJANYA	MPC	P.N.V Sowjanya.
9	200147	P.MEENA KUMARI	MPC	P. Meena Kumari
10	200148	P.KARTHI	MPC	P. Karthi
11	200204	CH.SRI DIVYA	MPCS	ch. Sridivya
12	200205	CH.PUSHPA LATHA	MPCS	CH. Pushpa.
13	200206	D.PALLAVI	MPCS	D Pallavi
14	200207	G.LALITHA	MPCS	G. Lalitha
15	200208	G.SRUTHI	MPCS	G.Sruthi
16	200252	M.USHA	MPCS	M. Usha
17	200253	M.HEMA PRASUNA	MPCS	M.Hema Prasuna
18	200254	M.DIVYA SRI	MPCS	M. Divya Sri
19	200255	M.SWATHI	MPCS	M. Swathi
20	200256	P.PAVANI	MPCS	P. Pavani

SIGNATURE

Students Attendance Register

S.NO	ROLL.NO	CLASS	NAME OF THE STUDENT
1	200101	MPC	G.UMA MEGHANA
2	200103	MPC	M.HIMA GANGA
3	200104	MPC	N.DEEPIKA
4	200105	MPC	A.NAGA DURGA
5	200135	MPC	K.SAHNAVI
6	200143	MPC	M.VENKATA SATYA
7	200145	MPC	N.B.L SIRISHA
8	200146	MPC	P.N.V SOWJANYA
9	200147	MPC	P.MEENA KUMARI
10	200148	MPC	P.KARTHI
11	200204	MPCS	CH.SRI DIVYA
12	200205	MPCS	CH.PUSHPA LATHA
13	200206	MPCS	D.PALLAVI
14	200207	MPCS	G.LALITHA
15	200208	MPCS	G.SRUTHI
16	200252	MPCS	M.USHA
17	200253	MPCS	M.HEMA PRASUNA
18	200254	MPCS	M.DIVYA SRI
19	200255	MPCS	M.SWATHI
20	200256	MPCS	P.PAVANI

SIGNATURRE

17

REPORT

PROGRAMME: **PG Entrance COACHING FOR III B.Sc. aspirants in Physics subject**

- In association with IQAC &In accordance with the resolution made during the meeting and documented in the minutes, it was unanimously agreed to arrange PG entrance coaching classes for interested students pursuing IIIB.Sc (Physics) This significant decision forms an integral part of the report on the PG entrance coaching classes in **Physics** subject conducted from April28th 2023, to May 27st ,2023(30days) 8:30am to 09:30am & 4.30pm to 5.30pm.These classes were conducted senior and expert faculty from the concerned department.

Approximately 20 motivated students actively participated in the coaching sessions These meticulously organized classes aimed to prepare the students comprehensively for the upcoming PG entrance examinations scheduled in the month of june 2023. The coaching sessions were diligently conducted from 8:30 AM to 09:30 AM & 4.30PM to 5.30PM, adhering to a structured curriculum meticulously designed to equip students with the essential skills and knowledge required for success in the examination.

The outcomes of these coaching classes have been highly encouraging. 1 student were qualified in the exam. 1 student showcased exceptional performance, securing pg. rank demonstrating both their commitment and the effectiveness of the coaching program.

The successful arrangement of these coaching classes aligns directly with the decision made during the meeting These sessions facilitated a conducive learning environment, significantly contributing to the preparedness and success of the students preparing for the PG entrance examination.

Their dedication has been instrumental in empowering our students for academic success.

LIST OF THE STUDENTS QUALIFIED IN M.Sc PHYSICS ENTRANCE EXAM 2022-2023

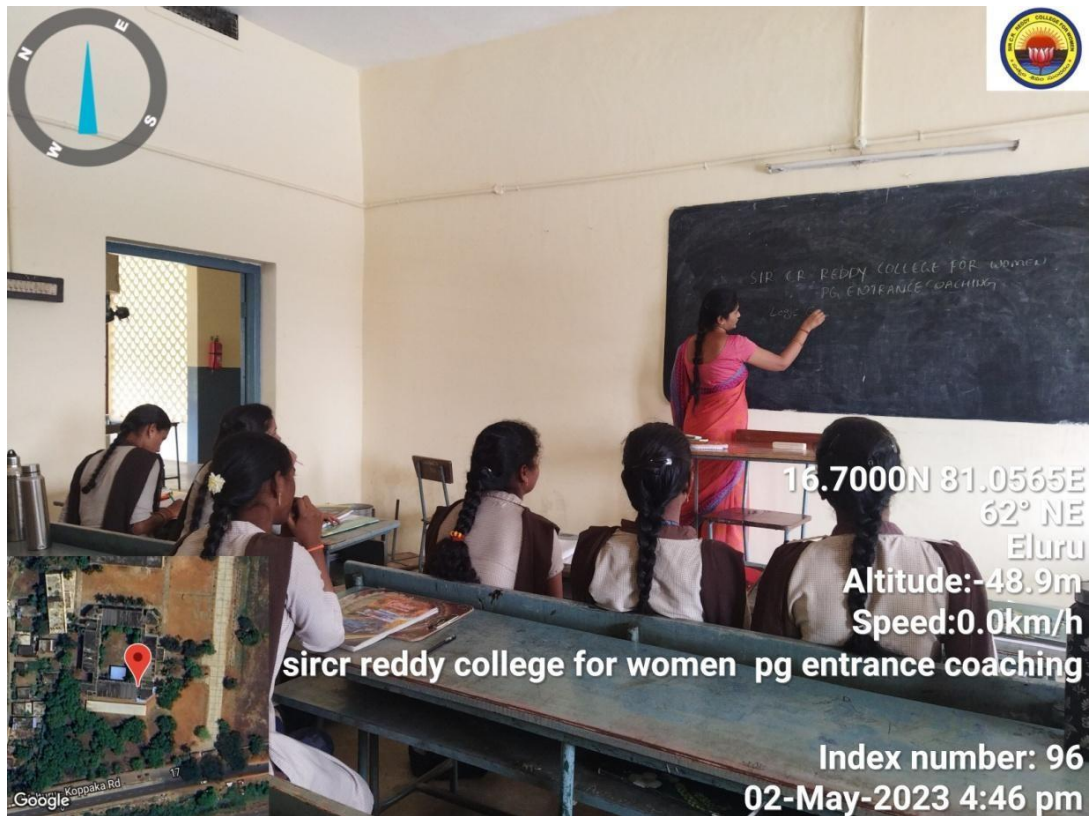| S.NO	NAME OF THE STUDENT	GROUP
1	K.SAHNAVI	MPC

RANK CARDS

APPGCET-2023
Post Graduate Common Entrance Tests
(Conducted by Andhra University, Visakhapatnam on behalf of APSCHE)

RANK CARD

Hall Ticket No.	:	30820230499
Candidate's Name	:	KUNA SAHNAVI
Father's Name	:	KUNA VENKATA VARA PRASAD
Test Code & Paper	:	308 : Physical Sciences

Community
BC-A

Date of Birth
10/12/2002

Marks Obtained	:	54
Rank	:	200

Convener

K. Sahnavi

INSTRUCTIONS TO THE CANDIDATE

1. The admissions into first year of various P.G. Courses (M.A., M.Com., M.Sc., MCJ, M.J.M.C, M.Lib.I.Sc., M.Ed., M.P.Ed., M.Sc.Tech. etc) in the Academic Year 2023-24 offered by Andhra Pradesh State funded Universities and their Constituent/ Affiliated [Government and Private (Aided/Unaided)] Colleges including Minority Educational Institutions in the State will be made through a centralized web counseling. Further, the schedules will be available in websites. The qualified candidates are advised to visit the websites from time to time for further admission schedules.
Websites: https://cets.apsche.ap.gov.in

2. The eligibility of the candidates is not verified / decided at the time of application and during the entrance test. The verification will be done only during the admissions. Hence, candidates are advised to ensure that they are eligible for the course/ subject they are applying for admission.

3. The candidates called for certificate verification must have the following original certificates /documents to upload for verification.
I. Rank Card and Hall Ticket of APPGCET - 2023.
II. Transfer Certificate (T.C) from the institution where the candidate has last studied.
III. Degree certificate and complete memorandum of marks or consolidated memo of qualifying examination (the downloaded memos are not allowed). The candidate should ensure that he / she has passed the qualifying examination with requisite percent of marks without which his / her admission will not be entertained.
IV. Secondary School or 10th std. Certificate.
V. Bonafide certificates from 9th Class onwards or Proof of Local \ Non-Local status of the candidate as per the rules in force.
VI. Community / Caste Certificate, if applicable.
VII. Latest Income Certificate issued by Tahsildar on or after 01.01.2023, if applicable.
VIII. Certificates of special categories, if applicable, and when called for admission under these categories.
IX. Aadhaar Card.

4. In addition to the above, the candidates must also upload passport size photographs that are similar to those uploaded during the online.

1/1

Photo Gallery

PG ENTRANCE COACHING GIVEN BY K.SIRISHA