



प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
 (Mains Answer Sheet)

|   |   |   |
|---|---|---|
| 1 | A | <p><u>SI unit system</u></p> <p>→ is standard system for measuring quantities</p> <p>→ Are decided by International organisation + IUPAC - France.</p> <p>→ D. Basic units = 7</p> <p>eg - Time → second, mass = Kilogram (kg)</p> <p>→ Derived from SI ⇒ force (Newton) = <math>kg\ ms^{-2}</math></p> |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
| 1 | B | <p><u>Kirchoff's Law</u> → Law principle in electricity.</p> <p>→ used in divided flow of electric current through circuit</p> <p><math>i_1 = i_2 + i_3 + i_4</math></p>  |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
| 1 | C | <p><u>Buffer solution</u> — chemical solution that has electrolytes and is used in electrolysis process.</p>  |
|   |   |   |
|   |   |   |
|   |   |   |

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भारत का नं. 1 संस्थान  
**कौटिल्य एकेडमी**  
सफलता का प्रवेश द्वार...

|   |     |   |
|---|-----|---|
| 1 | D   | Carbon monoxide —   |
|   |     | ◦ chemical formula — CO   |
|   |     | ◦ poisonous, colourless gas   |
|   |     | ◦ formed by incomplete <del>tempel</del> combustion of carbon.  |
|   |     | ◦ used in making producer gas etc   |
|   |     |   |
|   |     |   |
|   |     |   |
| 1 | E   | <u>Antibodies</u> — these are substances that fight against antigens/ foreign $\mu$ microorganism causing disease |
|   |     | — Present in Plasma of human blood  |
|   |     | — Recently plasma therapy used to transfer antibodies from used   |
|   |     | could patient to unhealthy.   |
|   |     |   |
| 1 | (F) | <u>Reflex Action</u> → sudden action caused by body against foreign agents of heat, smell, hurt on body etc       |
|   |     |   |
|   |     | → part of central nervous system  |
|   |     | → Protect body from a harm  |
|   |     | → is vely quick.  |

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सफलता का पथ है द्वारा...

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <u>Homi Jhanganji Bhabha</u> — was great Indian scientist, an physicist.                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | • He is pioneer in set up nuclear research programme in India                               |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | • <del>the</del> Bhabha Atomic <del>can</del> Research centre (BARC) is named in his honor. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <u>Islet of Langerhans</u> — It is part of Pancreas in human body                           |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | — It cause to release <u>Insulin</u> in human body  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | — It is beta (β) type   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | — protects body from getting high sugar levels (diabetes)                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | cost price = Rs 9600 = CP <sub>1</sub>  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (S.P) <sub>1</sub> = $9600 \times \frac{95}{100} = 96 \times 95 =$                          |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | with this he bought another item ⇒  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (C.P) <sub>2</sub> = (S.P) <sub>1</sub> = 96 × 95.  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Profit = 5% → $96 \times 95 \times \frac{105}{100}$   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | total <del>Profit</del> <sup>loss</sup> = $\frac{96 \times 95 \times 105}{100} - 9600$      |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | = 96 $\frac{[95 \times 105 - 100]}{100}$  |

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**कौटिल्य एकेडमी**  
सफलता का प्रवेश द्वार...

|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | $\text{less} = \frac{24}{100} \times 250 = \underline{Rs - 24}$ |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| 1                        | (J)                      | <u>Intranet</u> → is <del>an</del> type of network connection   |
| <input type="checkbox"/> | <input type="checkbox"/> | → It is limited to particular region                            |
| <input type="checkbox"/> | <input type="checkbox"/> | → Eg. In <u>Company</u> use intranet                            |
| <input type="checkbox"/> | <input type="checkbox"/> | → protects data breaches.                                       |
| 1                        | (K)                      | Potash Alum → It is an sulphate of potassium and Aluminium      |
| <input type="checkbox"/> | <input type="checkbox"/> | $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$                       |
| <input type="checkbox"/> | <input type="checkbox"/> | uses → cleaning wates   |
| <input type="checkbox"/> | <input type="checkbox"/> | cleaning after shave.   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| 1                        | (L)                      | Chandi Prasad Bhatt → Great Environmentalist of India           |
| <input type="checkbox"/> | <input type="checkbox"/> | → He guided India's Chipko movement                             |
| <input type="checkbox"/> | <input type="checkbox"/> | → He set up NGO protecting environment                          |



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|   |      |   |
|---|------|---|
| 1 | (14) | escape velocity $\rightarrow$ minimum velocity to throw any object from gravity of earth.   |
|   |      |   |
|   |      | • It's independent of Body mass.  |
|   |      | • Its standard value is <del>11.2 km/s</del> 11.2 km/s on earth surface.  |
|   |      | • satellite required to move with this speed to go off in space.  |
|   |      |   |
| 1 | M    | Meiosis $\rightarrow$ is process of cell division<br>- Take place in viruses, bacteria.<br>- responsible for cell division leading to formation of new cells.                           |
|   |      |   |
|   |      |   |
| 1 | 0    | Gibberellin $\rightarrow$ is plant hormone<br>$\rightarrow$ responsible for growth & decides height<br>$\rightarrow$ if low $\Rightarrow$ dwarf plant<br>High $\Rightarrow$ Tall plant. |
|   |      |   |
|   |      |   |
|   |      |   |
|   |      |   |



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**कौटिल्य एकेडमी**  
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|                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | mean and mode are measure of central tendency.   |
| <input type="checkbox"/> | <input type="checkbox"/> |  |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>Mean</u> is sum of total values of all observations divided by total number of observations |
| <input type="checkbox"/> | <input type="checkbox"/> | mean = $\frac{\text{sum of value of observations}}{\text{Total number of observations}}$       |
| <input type="checkbox"/> | <input type="checkbox"/> | mean = $\frac{\sum_{i=1}^n x_i}{n}$  |
| <input type="checkbox"/> | <input type="checkbox"/> | Mode - is defined as the value of the most frequent term in the given observation.             |
| <input type="checkbox"/> | <input type="checkbox"/> | - i.e. if any term comes most number of times then this is called mode of those observations.  |
| <input type="checkbox"/> | <input type="checkbox"/> |  |
| <input type="checkbox"/> | <input type="checkbox"/> | Along with it median forms 3 central measures of central tendency.                             |
| <input type="checkbox"/> | <input type="checkbox"/> |  |
| <input type="checkbox"/> | <input type="checkbox"/> |  |

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सफलता का प्रवेश द्वार...

|                             |                          |   |                             |            |                            |         |   |         |
|-----------------------------|--------------------------|---|-----------------------------|------------|----------------------------|---------|---|---------|
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| 2                           | D                        | Heat is energy associated with high temperature. Main source is sun.  |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | Methods of Heat transfer  |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">Conduction</td> <td style="padding: 5px;">Convection</td> <td style="padding: 5px;">Radiation</td> </tr> </table>  | Conduction                  | Convection | Radiation                  |         |   |         |
| Conduction                  | Convection               | Radiation   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | Conduction - transfer of heat when 2 surface are in contact   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">High Temp (T<sub>1</sub>)</td> <td style="padding: 5px; text-align: center;">→</td> <td style="padding: 5px;">Low Temp (T<sub>2</sub>)</td> </tr> <tr> <td style="padding: 5px;">metal 1</td> <td style="padding: 5px; text-align: center;">↔</td> <td style="padding: 5px;">metal 2</td> </tr> </table> <p style="text-align: center;">conduction</p> | High Temp (T <sub>1</sub> ) | →          | Low Temp (T <sub>2</sub> ) | metal 1 | ↔ | metal 2 |
| High Temp (T <sub>1</sub> ) | →                        | Low Temp (T <sub>2</sub> )  |                             |            |                            |         |   |         |
| metal 1                     | ↔                        | metal 2   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | Convection - Generally is liquid material   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | - Transfer of heat by movement of substance   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> | <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center;">water</p> </div> <p style="text-align: center;">↑ heat transfer by convection</p>  |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |
| <input type="checkbox"/>    | <input type="checkbox"/> |   |                             |            |                            |         |   |         |





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केंद्रीय एकेडमी  
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|   |     |  |   |
|---|-----|--|---|
| 2 | (E) | Acid & Base have the following differences |   |
|   |     | Acid                                       | Base  |
|   |     | • Sour taste                               | • Bitter taste                              |
|   |     | • Gives $H^+$ ion on dissociation in water | • Gives $OH^-$ ion on dissociation in water |
|   |     | • Gives electron (Lewis acid)              | • Accepts electron ( $e^-$ ) (Lewis base)   |
|   |     | • Turn blue litmus red                     | • Turn Red litmus Blue                      |
|   |     | • Turn methyl orange into pink.            | • Turn methyl orange unchanged              |
|   |     | • Examples —<br>$HCl, H_2SO_4, HNO_3$      | • examples<br>$NaOH, NH_4OH$                |
|   |     | • pH ranges between [0 — 7]                | • pH ranges [7 — 14]                        |
|   |     | • uses —<br>• Oxalic acid — Tomatoes       | • uses<br>— Caustic Soda — $NaOH$           |
|   |     | • Malic acid — Apple                       | — Bile juice                                |
|   |     | • Acetic acid — Vinegar                    | —   |
|   |     | • Saliva                                   |   |



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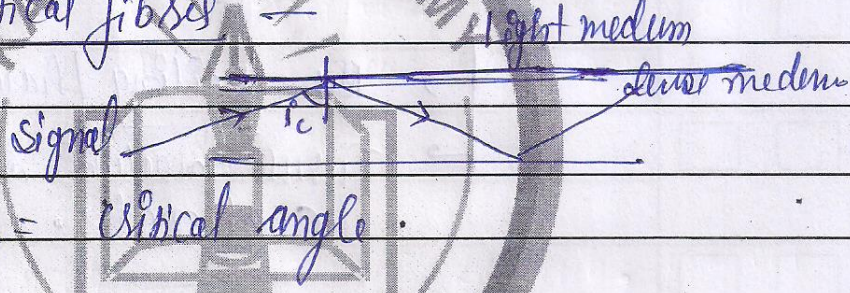
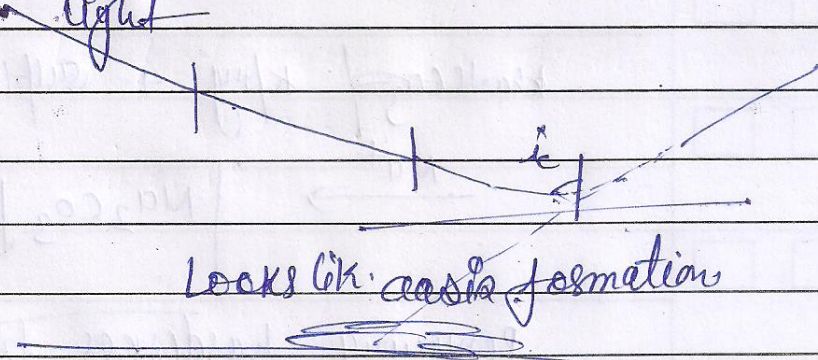
मुख्य परीक्षा उत्तर पुस्तिका  
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|   |     |  |
|---|-----|--|
| 2 | (F) | Hardness of water is due to presence of soluble salts that reduces solubility of detergents and forms less froth in water. |
|   |     |  |
|   |     |  |
|   |     | ways to overcome it -  |
|   |     | (I) <del>By</del> Removing Temporary hardness  |
|   |     | ↳ By boiling hard water  |
|   |     | ↳ Turns insoluble salt into insoluble carbonates.  |
|   |     | (II) Permanent hardness of $\text{K/mg}$ salt of sulphides and bicarbonates -  |
|   |     | By _____ Clark process   |
|   |     | _____ Permut process.  |
|   |     | <del><math>\text{CaHCO}_3</math></del> / $\text{K/mg}$ + sulphides / bicarbonates  |
|   |     | $\xrightarrow{\text{Na}^+}$ $\boxed{\text{Na}_2\text{CO}_3}$ + $\text{CO}_2 + \text{H}_2\text{O}$                          |
|   |     | Removing hardnesses protect clothes, metal from white scum formation.  |



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|   |   |   |
|---|---|---|
| 2 | 4 | <p>TIR — when beam of light moves from dense medium to light medium at angle greater than <u>critical angle</u> then light is reflection reflected back in dense medium.</p>  |
|   |   |   |
|   |   |   |
|   |   | <p>Examples of TIR from daily life</p>  |
|   |   | <p>(i) Optical fibres</p>  <p>Signal <math>i_c</math> light medium denser medium<br/> <math>i_c = \text{critical angle}</math></p> |
|   |   |   |
|   |   | <p>(ii) Diamond show TIR <math>\rightarrow</math> resulting in sparkling</p>  |
|   |   |   |
|   |   | <p>(iii) mirage formation in hot days</p>  <p>Light<br/>     Looks like water formation</p>                                       |
|   |   |   |
|   |   |   |

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सफलता का प्रवेश द्वार

|                          |                          |                          |                          |   |   |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 4 | Virus — are microorganism that are harmful for human body.  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   |   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | Information on Virus —  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • they sequeise human body as host to replicate   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • they are generally unable to survive without host   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • they are highly susceptible to mutations resulting in causing some of deadly diseases                               |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | L. Eg — • HIV AIDS — no vaccine   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • polio virus — polio vaccine.  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • covid-19 — <del>undisbna</del> vaccine/ sputnik by Russia.  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | • there is cell division by meiosis process.  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   |   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |   | General mode of transfer is by air, water, faecal route etc. Covid-19 by Corona virus is one of deadly virus disease. |

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|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| 2                        | (J)                      | digestive system includes many process —<br>Ingestion, transportation, digestion, assimilation<br>and defecation. |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | So there are various diseases related to it —   |
| <input type="checkbox"/> | <input type="checkbox"/> | * GERD → a Gastro disease, where Acid<br>formed in stomach move back towards<br>oesophagus.                       |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | * Dysshoec → due to Bacteria; causes<br>problem in Intestine  |
| <input type="checkbox"/> | <input type="checkbox"/> | * cholera disease due to contaminated food  |
| <input type="checkbox"/> | <input type="checkbox"/> | * Acidity → use of Antacids like milk of<br>magnesia.   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | * Diabetes → where insulin formation is stopped<br>↳ food intake is regulated especially<br>sugar.                |
| <input type="checkbox"/> | <input type="checkbox"/> | * Lactose intolerance   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
|                          |                          | These are some diseases related<br>to digestive system.   |



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|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| 2                        | (L)                      | Kidneys are important organs in human body.   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | Functions of kidney are —   |
| <input type="checkbox"/> | <input type="checkbox"/> | * Removal of unwanted material from our body through <u>urine</u>                     |
| <input type="checkbox"/> | <input type="checkbox"/> | * It purifies human <u>blood</u>  |
| <input type="checkbox"/> | <input type="checkbox"/> | If kidney are dysfunctional then →<br>Dialysis is done                                |
| <input type="checkbox"/> | <input type="checkbox"/> | * Excreted material includes → water (>90%)<br>urea (~1.5%), Ammonia, some salts etc. |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | Kidney have Bowman's capsule in millions that help in filtering.                      |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |







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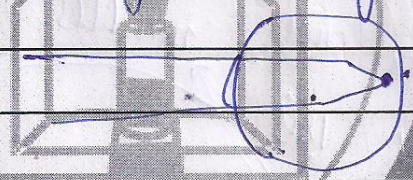
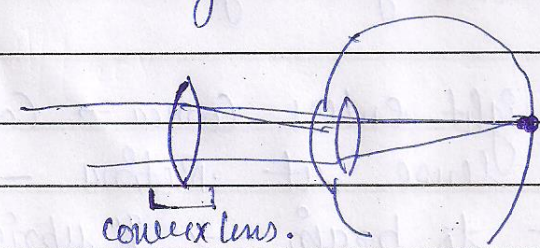
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|   |   |  |
|---|---|--|
| 8 | B |  |
| 3 | B | <p>human eye is system that enable us to see objects around us. It has a convex lens through which light enters and image is formed on Retina.</p> |
|   |   |  |
|   |   |  |
|   |   | <p style="text-align: center;">Human eye diagram</p>   |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   |  |
|   |   | <p>Formation of image →</p>  |
|   |   | <p>Right light enters cornea → Converged by convex lens at Retina → signal is sent to brain → It uprights image.</p>                               |



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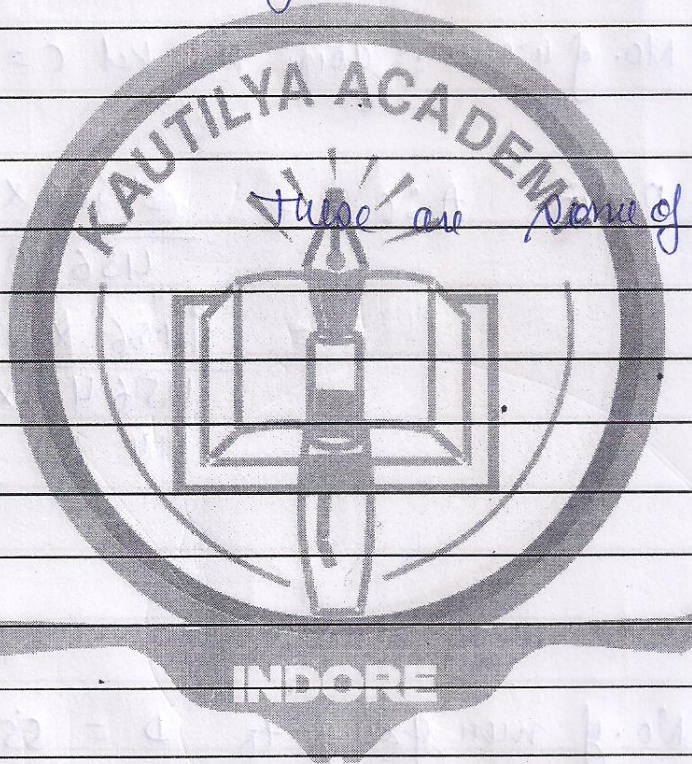
|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | But due to many factors like → Age, weakening of muscles, defect in lens, we face many vision defects —   |
| <input type="checkbox"/> | <input type="checkbox"/> | There are following vision defects —  |
| <input type="checkbox"/> | <input type="checkbox"/> | (1) Myopia / short sightedness —  |
| <input type="checkbox"/> | <input type="checkbox"/> | <ul style="list-style-type: none"> <li>• Unable to see distant objects</li> <li>• Image is formed before Retina</li> </ul>                                |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | • Use → <u>Concave lens to rectify</u>  |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | (2) Hypermetropia / long sightedness  |
| <input type="checkbox"/> | <input type="checkbox"/> | <ul style="list-style-type: none"> <li>• Inability to see close objects</li> <li>• Image formation beyond Retina</li> <li>• use of convex lens</li> </ul> |
| <input type="checkbox"/> | <input type="checkbox"/> |    |
| <input type="checkbox"/> | <input type="checkbox"/> | convex lens.  |



प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
 (Mains Answer Sheet)

|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | (3) <u>Night blindness</u> — due to deficiency of <u>Retinol</u> (Vitamin A).   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | (4) <u>Color Blindness</u> → inability to differentiate certain type of colors. |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | These are some of vision defects.   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> |   |



प्रश्न  
संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
(Mains Answer Sheet)



भारत का नं. 1 संस्थान  
कौटिल्य एकेडमी  
सफलता का प्रवेश द्वार...

|                          |                                     |  |
|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/>            |  |
| <input type="checkbox"/> | <input type="checkbox"/>            |  |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | No. of women going supermarket A<br>$= \frac{34560 \times 55}{100}$ $\oplus$ |
| <input type="checkbox"/> | <input type="checkbox"/>            |  |
| <input type="checkbox"/> | <input type="checkbox"/>            | No. of women going market C = $\frac{45640 \times 45}{100}$                  |
| <input type="checkbox"/> | <input type="checkbox"/>            | Ratio A : C = $\frac{34560 \times 55}{45640 \times 45}$ "                    |
| <input type="checkbox"/> | <input type="checkbox"/>            | $= \frac{384}{414} \times \frac{11}{9} = \frac{384}{414}$                    |
| <input type="checkbox"/> | <input type="checkbox"/>            | $= \frac{64}{69}$  |
| <input type="checkbox"/> | <input type="checkbox"/>            |  |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | No. of men going to D = $\frac{55500 \times 41}{100}$                        |
| <input type="checkbox"/> | <input type="checkbox"/>            | $= 555 \times 41$  |
| <input type="checkbox"/> | <input type="checkbox"/>            | No. of total persons = 303600  |
| <input type="checkbox"/> | <input type="checkbox"/>            | Approx % = $\frac{555 \times 41}{303600} \times 100$                         |
| <input type="checkbox"/> | <input type="checkbox"/>            | $= 7.04\%$   |



प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
(Mains Answer Sheet)

|                          |                                     |   |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | No. of children to C = $45640 \times \frac{20}{100} \times \frac{1}{5}$ |
| <input type="checkbox"/> | <input type="checkbox"/>            | = $4564 \times 2 = 9128$  |
| <input type="checkbox"/> | <input type="checkbox"/>            | No. of children going to Sim - F  |
| <input type="checkbox"/> | <input type="checkbox"/>            | = $59650 \times 14 \%$  |
| <input type="checkbox"/> | <input type="checkbox"/>            | = $\frac{8365 \times 100}{5} = 1193 \times 7$                           |
| <input type="checkbox"/> | <input type="checkbox"/>            | % of Required = $\frac{9128}{59650} \times 100$                         |
| <input type="checkbox"/> | <input type="checkbox"/>            | = $\frac{1304 \times 100}{1193} = 109.30\%$                             |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Total no. of children going B & D                                       |
| <input type="checkbox"/> | <input type="checkbox"/>            | = $65900 \times \frac{20}{100} + 55500 \times \frac{33}{100}$           |
| <input type="checkbox"/> | <input type="checkbox"/>            | = 31495 children.   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |

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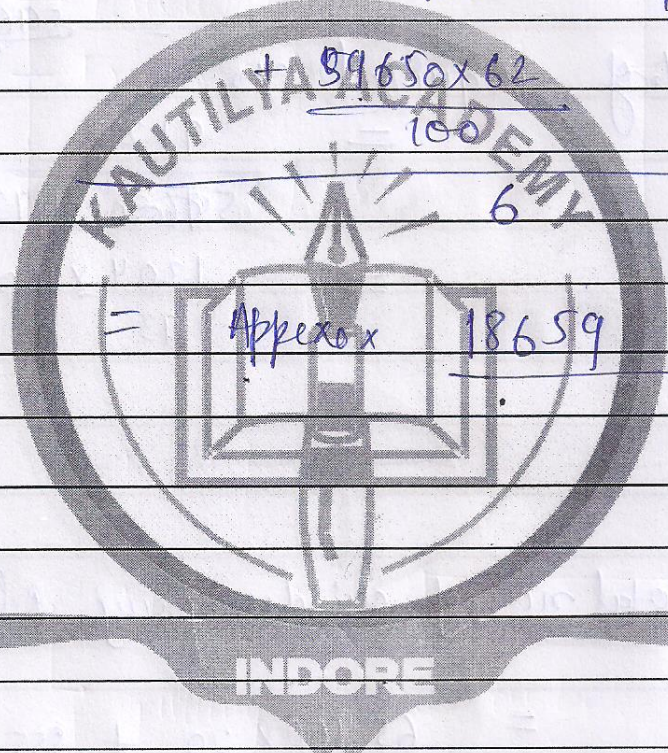


भारत का नं. 1 संस्थान  
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प्रश्न  
संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
(Mains Answer Sheet)

|                          |                                     |   |
|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Average no. of women going all Sulepukt   |
| <input type="checkbox"/> | <input type="checkbox"/>            | $= \frac{34560 \times 55}{100} + \frac{65900 \times 43}{100} + \frac{45640 \times 45}{100}$ |
| <input type="checkbox"/> | <input type="checkbox"/>            | $+ \frac{55500 \times 26}{100} + \frac{42350 \times 70}{100}$                               |
| <input type="checkbox"/> | <input type="checkbox"/>            | $+ \frac{59650 \times 62}{100}$   |
| <input type="checkbox"/> | <input type="checkbox"/>            | 6   |
| <input type="checkbox"/> | <input type="checkbox"/>            | = Approx 18659  |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |
| <input type="checkbox"/> | <input type="checkbox"/>            |   |


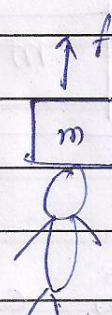


प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
(Mains Answer Sheet)

|   |   |  |
|---|---|--|
| 3 | A | <p>Force is push or pull on object with mass that causes it to move or stop, changing its velocity and so causes acceleration.</p>   |
|   |   |  |
|   |   | <p>Formula <math>\Rightarrow F = ma</math></p>   |
|   |   | <p><math>F = \text{force}</math>, <math>m = \text{mass}</math>, <math>a = \text{acceleration}</math></p>   |
|   |   | <p>About force</p> <p>SI unit = Newton (N)<br/><math>\hookrightarrow \text{kgms}^{-2}</math></p> <p>Other unit - dyne etc</p>  |
|   |   | <p>Force results into</p>  |
|   |   | <p>change in velocity</p>  |
|   |   | <p>can stop object moving</p>  |
|   |   | <p>can move, stopped object.</p>   |
|   |   | <p>INDORE</p>  |
|   |   | <p>acceleration (a)</p>  |
|   |   | <p>The diagram shows a rectangular block of mass 'm'. A horizontal arrow labeled 'F' points to the right, starting from the left side of the block. To the right of the block, there is a dashed outline of the same block, and a solid arrow labeled 'a' points to the right, indicating the direction of acceleration.</p> |
|   |   | <p><math>F = ma</math></p>   |
|   |   | <p>It is explained under second law of Newton.</p>   |



|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> |   |
| <input type="checkbox"/> | <input type="checkbox"/> | There are 2 types of forces   |
| <input type="checkbox"/> | <input type="checkbox"/> | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Contact forces</p> <ul style="list-style-type: none"> <li>- Tension force</li> <li>- Frictional force</li> <li>- muscular force</li> </ul> </div> <div style="text-align: center;"> <p>Non Contact forces</p> <ul style="list-style-type: none"> <li>- Gravitational</li> <li>- magnetic</li> <li>- electrical force</li> <li>- Nuclear force</li> </ul> </div> </div> |
| <input type="checkbox"/> | <input type="checkbox"/> | (I) Contact force   |
| <input type="checkbox"/> | <input type="checkbox"/> | <p>* Tension force →</p>  <p>↳ pulling objects on both side like wire<br/>↳ causes its expansion.</p>   |
| <input type="checkbox"/> | <input type="checkbox"/> | <p>* muscular force →</p>  <p>↳ postar lifting luggage from ground to its head.</p>   |

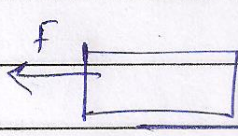
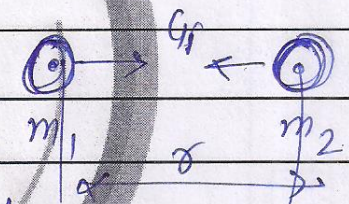


प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका (Mains Answer Sheet)



भारत का नं. 1 संस्थान  
कौटिल्य एकेडमी  
सफलता का प्रवेश द्वार

|                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | * <u>frictional force</u> → Resistance caused by surface, air etc on moving objects   |
| <input type="checkbox"/> | <input type="checkbox"/> |    |
| <input type="checkbox"/> | <input type="checkbox"/> | → frictional force by surface   |
| <input type="checkbox"/> | <input type="checkbox"/> | (ii) <u>Non Contact force</u> -   |
| <input type="checkbox"/> | <input type="checkbox"/> | • <u>Gravitational</u> → force of attraction on distant objects of same mass etc  |
| <input type="checkbox"/> | <input type="checkbox"/> | $F_g = G \frac{m_1 m_2}{r^2}$   |
| <input type="checkbox"/> | <input type="checkbox"/> |    |
| <input type="checkbox"/> | <input type="checkbox"/> | eg → force on Earth by Sun  |
| <input type="checkbox"/> | <input type="checkbox"/> | • <u>magnetic force</u> → forces of attraction or repulsion between electrically charged particles because of <u>motion</u> . |
| <input type="checkbox"/> | <input type="checkbox"/> | eg → Application in dynamo, electric motors   |
| <input type="checkbox"/> | <input type="checkbox"/> | • <u>Electrical force</u> → Attraction or repulsion between charged non moving particles.                                     |
| <input type="checkbox"/> | <input type="checkbox"/> | These are types of forces that exist in nature.   |