TARGET BOARD EXAMINATION 2025-26

DAY 2
2/50

Social Science

Q1.“Democracy is better than any other alternative government.” Justify the statement
Ans*: Democracy is a better form of government than other alternatives:*
(i) Promotes equality among citizens.
(ii) Enhances the dignity of the individual.
(iii) Improves the quality of decision making.
(iv) Provides a method to resolve conflicts.
*(v) Allows room to correct mistakes****.***

Q2. ‘Democracy is accountable, responsive and legitimate government.’ Justify the statement.
Ans *:* ***Importance of Democratic Government:***
(i) *It produces a government that is accountable to citizens.*
(ii) *It responses to the needs and expectations of citizens.*
(iii) *It ensures that decision making will be based on norms and procedures for transparency making it accountable.*
(iv) *It has great success in setting up regular and free elections.*
(iv) *Democracy's ability to generate its own support is the most positive feature.*

Q3. “Workers too had their own understanding of Mahatma Gandhi's thoughts and the notion of Swaraj.” Explain the statement with the example of Assam.
Ans. *“The plantation workers in Assam had their own understanding of Mahatma Gandhi and the notion of Swaraj”:*
(i) *For plantation workers in Assam, freedom meant the right to move freely in and out of the confined space in which they were enclosed.*
(ii) *Swaraj meant retaining a link to the village from which they had come.*
(iii) *Under the Inland Emigration Act of 1859 plantation workers were not permitted to leave the tea gardens without permission.*
(iv) *When they heard of the Non-Cooperation Movement, thousands of workers defied the authorities, left the plantations and headed home.*
(v) *They believed that Gandhi Raj was coming and everyone would be given land in their own village.*

Q4. ***Explain the three important ‘Terms of Credit’.***
Ans. *Terms of credit are the requirements that need to be satisfied for any credit arrangements. It includes interest rates, collateral, documentation and mode of repayment. However, the terms of credit vary depending upon the nature of lender, borrower and loan. The three terms of credit in detail are:*
(i) Interest rates: *The interest rate is the rate that is implied on the entity while borrowing and lending loans, interest rate is mentioned in the document.*
(ii) Collateral: *It is an asset that the borrower owns like a house, shop, property, etc. It is used to take loans. It is a guarantee to a lender, until the loan is repaid.*
(iii) Documentation required: *The lenders before lending money check all documents related to the employment record and income earned by the borrower.*
(iv) Mode of Payment: *It is the duration in which the loan is to be repaid. Long term loans can be repaid in 12 months, 6 months or monthly instalments by cash, cheque, etc.*

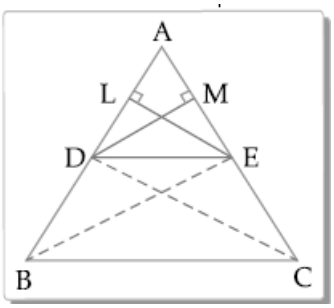
Q5. ***“Political parties play an important role in democratic countries.” Justify the statement***
Ans*: Political parties perform many crucial functions in democracy:*
(i) They contest elections; parties choose candidates to contest elections. The process of choosing candidates varies, e.g., in the U.S.A., party members choose the candidates, while in India top party leaders choose the candidate.
(ii) They put forward policies and programmes and people choose from them. They pile up similar opinions into major stances that the parties support usually on the line of the Ruling Party.
(iii) They make laws. Legislature makes laws since the majority of the members are from a party, they go up by the lines parties take. Moreover, they train and make people (party members) leaders who constitute the executive.
(iv) They play the role of opposition. The parties which lose elections form opposition, criticizing govt. policies and wrong decisions, mobilising public support against them.

MATHEMATICS

Q1.If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then prove that the other two sides are divided in the same ratio.

Ans:

Given: A ΔABC in which DE||BC and DE intersects AB and AC at D and



To prove $\frac{AD}{DB}=\frac{AE}{EC}$

Join BE and CD.

Draw EL ⊥AB and DM⊥AC.

We have,

$$ar(\Delta ADE)=\frac{1}{2}\times AD\times EL \quad \left[\because \Delta=\frac{1}{2}B\times H\right]$$

and $$ar(\Delta DBE)=\frac{1}{2}\times DB\times EL$$

$$\frac{Ar.\Delta\ DBE}{Ar.\ \Delta\ DBE}=\frac{\frac{1}{2}\times AD\times EL}{\frac{1}{2}\times DB\times EL}=\frac{AD}{DB} \quad (i)$$

Similarly

Ar (Δ ADE) ≅ ar (Δ ECD)

$$=\frac{1}{2}\times AE\times DM$$

and $ar(\Delta ECD)$

$$\therefore \quad \frac{ar(\Delta ADE)}{ar(\Delta ECD)}=\frac{AE}{EC} \qquad ...(ii)$$

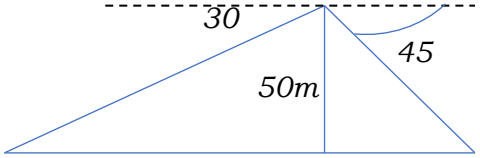
Now ΔDBE and ΔECD being on the same base DE and between the same parallel DE and BC

$$ar(\Delta DBE)=ar(\Delta ECD)$$

$$\frac{AD}{DB}=\frac{AE}{EC}$$

Q2.From the top of a 45 m high light house, the angles of depression of two ships, on the opposite side of it, are observed to be 30° and 60°. If the line joining the ships passes through the foot of the light house, find the distance between the ships.

Ans :



Given : Height of a light house AB = 45 m

To find: CD = ?

Sol: Distance between the ships = CD

$\angle ACB = 30°$ and $\angle ADB = 60°$

(alternate angles are equal)

Now, In right angle ΔABC

$$\tan 30=\frac{AB}{BC}$$

$$\frac{1}{\sqrt{3}}=\frac{45}{BC}$$

$$BC=45\sqrt{3} \qquad ...(i)$$

In right angle ΔABD,

$$\tan 60°=\frac{AB}{BD}$$

$$\sqrt{3}=\frac{45}{BD}$$

$$BD=\frac{45\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{45\sqrt{3}}{3}=15\sqrt{3}$$

From (i) and (ii) we get,

$$BD=BC+BD$$
$$=45\sqrt{3}+15\sqrt{3}=60\sqrt{3}$$
$$=60\times 1.73$$
$$=103.8\ \text{m}$$

Q3.If the length of a rectangle is reduced by 5 cm and its breath is increased by 2 cm, then the area of the rectangle is reduced by 80 cm². However, if we increase the length by 10 cm and decrease the breadth by 5 cm, its area is increased by 50 cm². Find the length and breadth of the rectangle.

Sol. Let the length of rectangle be x m and breadth of rectangle be y m

Area of rectangle $= xy\ m^2$

$$(x-5)(y+2)=xy-80$$
$$xy-5y+2x-10=xy-80$$
$$2x-5y=-70 \qquad ...(i)$$
$$(x+10)(y-5)=xy+50$$
$$xy-5x+10y-50=xy+50$$
$$-5x+10y=100$$
$$-x+2y=20 \qquad ...(ii)$$
$$2x-5y=-70 \qquad ...(i)$$

from (i) & (ii) $\quad x = 40$ m, $y = 30$ m

∴ length of rectangle = 40 m

and breadth of rectangle = 30 m

Q4. ***The sum of first 15 terms of an A.P. is 750 and its first term is 15. Find its 20th term.***

Sol.

Given, $S_{15} = 750$ and first term $a = 15$

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

$$S_{15} = \frac{n}{2}[2a + (15-1)d]$$

$$750 = \frac{15}{2}[2 \times 15 + 14d]$$

$$50 \times 2 = 30 + 14d$$

$$14d = 100 - 30$$

$$14d = 70$$

$$d = \frac{70}{14} = 5$$

$$a_n = a + (n-1)d$$

$$a_{20} = a + (20-1)d$$

$$= 15 + 19 \times 5$$

$$= 15 + 95$$

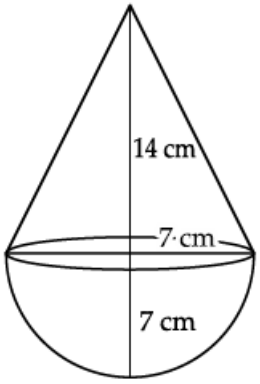
$$= 110$$

Q5A solid is in the shape of a right-circular cone surmounted on a hemisphere, the radius of each of them being 7 cm and the height of the cone is equal to its diameter. Find the volume of the solid.

Sol

Radius = 7 cm

Height = 2 × Radius = 14 cm



Volume fo cone=

$$\frac{1}{3}\pi r^2 h$$

Volume of solid = Volume of cone + Volume of hemisphere

$$= \frac{1}{3}\pi r^2 h + \frac{2}{3}\pi r^3$$

$$= \frac{1}{3}\pi r^2 (h + 2r)$$

$$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \ (14 + 2 \times 7)$$

$$= \frac{154}{3} \times 28$$

$$= \frac{4312}{3}$$

$$= 1437.33 \text{ (approx) cm}^3$$

SCIENCE

Q1.An electric motor rated 1100 W is connected to 220 V mains. Find:
(i) The current drawn from the mains,
(ii) Electric energy consumed if the motor is used for 5 hours daily for 6 days.
(iii) Total cost of energy consumed if the rate of one unit is `

Ans:
When a pure red flowered plant is crossed with pure white flowered plant, in the next generation, plants with red flowers are produced. It is called Mendel's Monohybrid cross

Ans. Given,

Voltage (V) = 220 V

Power (P) = 1100 W

(i) Power (P) is given by the expression,

$$P = V \times I$$

$$1100 = 220 \times I$$

$$I = \frac{1100}{220} = 5A$$

(ii) Electrical energy (E)

$$= \frac{P(\text{in watt}) \times t(\text{in hour per day})}{1000} \times \text{No. of days}$$

$$= \frac{1100\ W \times (5h/\text{day})}{1000} \times 6 \text{ days}$$

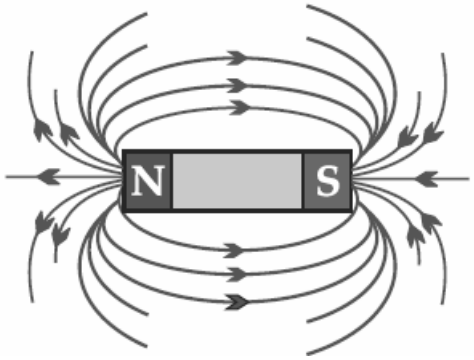
=33 unit

iii) *Total cost = Energy × Rate*

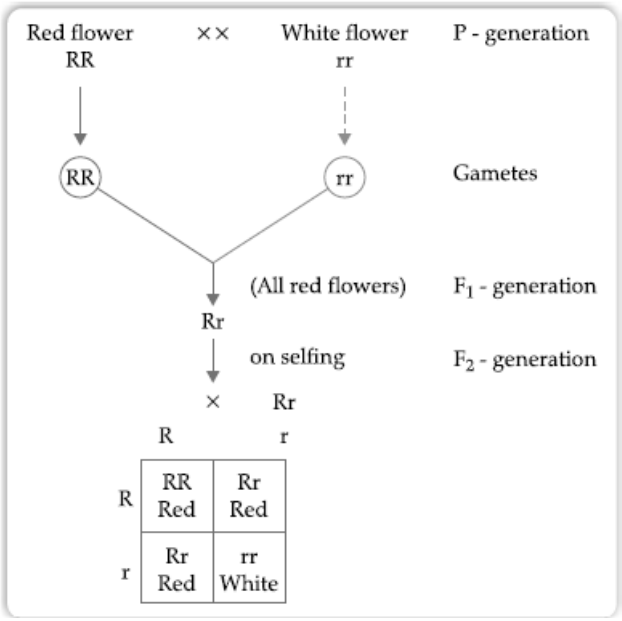
*= 33 * 5 = 165 rs.*

Q2. ***Magnetic field is a physical quantity that has both direction and magnitude." How can this statement be proved with the help of magnetic field lines of a bar magnet?***

Ans *: Magnetic field is a quantity that has both direction and magnitude. The direction of the magnetic fields taken to be the direction in which a north pole of the compass needle moves inside it. Therefore it is taken by convention that the field lines emerge from North Pole and merge at the South Pole. Inside the magnet, the direction of field lines is from its south pole to its north pole. Thus, the magnetic field lines are closed curves. The relative strength of the magnetic field is shown by the degree of closeness of the field lines. The field is stronger, that is, the force acting on the pole of another magnet placed is greater where the field lines are crowded*



Q3. ***In a cross between red coloured and white coloured flowers, when plants with red coloured flowers of F1 generation were self pollinated, plants of F2 generation were obtained in which 75% of plants were with red flowers and 25% plants were with white flowers. Explain the inheritance of traits in the above cross with the help of a flow chart only along with the ratio of plants obtained.***



(a) Phenotypic ratio: Red : White : 3 : 1

(b) Genotypic ratio: Pure Red : Hybrid Red : Pure White: 1 : 2 : 1

Q4. **Mention the functions of (a) Placenta (b) Fallopian tubes (c) Uterus and (d) Ovary in the human female reproductive system.**

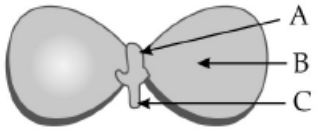
Ans: (a) Placenta: Provides nourishment to the embryo from mother's blood / Removal of waste from embryo to mother's blood. (Any one)

(b) Fallopian tube: Releases egg/ female gamete/ ovum releases oestrogen/ female hormones.

(c) Uterus: Development of embryo/ foetus.

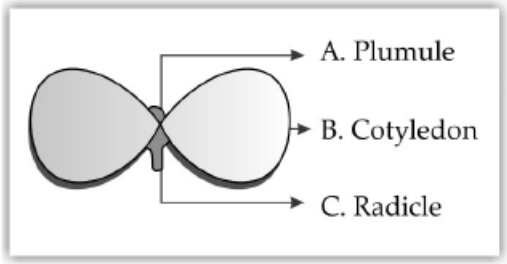
(d) Ovary: Releases egg/ female gamete/ ovum releases oestrogen/ female hormones**.**

Q5. In the following figure showing a germinating gram seed, name the parts labelled as A, B and C



Why is Part 'B' considered to be important during germination?

Ans:



The part B is the cotyledon which serves as a food store during germination. It provides nutrients to the growing embryo during germination