

NEW STANDARD ACADEMY

Date : 03-08-2026

CLASS : 10TH

Marks: 60
Time: 2 hours

PHYSICS

- A resistor of $20\ \Omega$ is connected to a 10 V battery. The current flowing through the resistor is:
(a) 0.2 A (b) 0.5 A
(c) 2 A (d) 5 A
- A wire has a resistance of $12\ \Omega$. If the potential difference across it is 24 V, the electrical power consumed is:
(a) 24 W (b) 36 W
(c) 48 W (d) 72 W
- An electric bulb rated 60 W, 240 V is operated at its rated voltage. Its resistance is:
(a) 240 Ω (b) 480 Ω
(c) 960 Ω (d) 1200 Ω
- Two resistors of $4\ \Omega$ and $6\ \Omega$ are connected in series across a 20 V battery. The current in the circuit is:
(a) 1 A (b) 2 A
(c) 4 A (d) 5 A
- Three resistors of $6\ \Omega$ each are connected in parallel. Their equivalent resistance is:
(a) 18 Ω (b) 6 Ω
(c) 3 Ω (d) 2 Ω
- A current of 3 A flows through a resistor for 5 minutes. The charge passing through the resistor is:
(a) 180 C (b) 600 C
(c) 900 C (d) 1500 C
- An appliance uses 1000 W of power for 3 hours daily. The electrical energy consumed in one day is:
(a) 1 kWh (b) 2 kWh
(c) 3 kWh (d) 4 kWh
- Two resistors 80 and $24\ \Omega$ are connected in parallel. Their equivalent resistance is:
(a) 4 Ω (b) 6 Ω
(c) 8 Ω (d) 12 Ω
- A 100 W bulb operates on 200 V. The current drawn by the bulb is:
(a) 0.25 A (b) 0.5 A
(c) 1 A (d) 2 A
- A heater draws 5 A current from a 220 V supply. The heat produced in 2 minutes is:
(a) 66 kJ (b) 132 kJ
(c) 88 kJ (d) 44 kJ
- A $4\ \Omega$ and $12\ \Omega$ resistor are connected in parallel. This combination is connected in series with a $6\ \Omega$ resistor. The total resistance is:
(a) 3 Ω (b) 6 Ω
(c) 9 Ω (d) 12 Ω
- A wire of resistance $5\ \Omega$ is stretched to twice its original length without changing volume. The new resistance becomes:
(a) 5 Ω (b) 10 Ω
(c) 20 Ω (d) 40 Ω
- A 1200 W electric kettle is used for 15 minutes. If the cost of electricity is ₹8 per kWh, the cost of operating the kettle is:
(a) ₹1.20 (b) ₹2.40
(c) ₹3.60 (d) ₹4.80
- Two bulbs rated 100 W and 60 W are connected in parallel across 220 V. The total current drawn is approximately:
(a) 0.36 A (b) 0.50 A
(c) 0.73 A (d) 1.20 A
- A resistor consumes 200 J of electrical energy in 20 s when connected to a battery. If the current through it is 2 A, the resistance is:
(a) 1 Ω (b) 2.5 Ω
(c) 5 Ω (d) 10 Ω

CHEMISTRY

16. Match List-I with List-II and select the correct answer by using the codes given below the list.

List-I (Name of acid)		List-II (Source)	
(A)	Lactic acid	(P)	Tamarind
(B)	Malic acid	(Q)	Curd
(C)	Acetic acid	(R)	Tomato
(D)	Tartaric acid	(S)	Vinegar

Codes:

- | | | | | |
|-----|-----|-----|-----|-----|
| | (A) | (B) | (C) | (D) |
| (a) | (P) | (S) | (Q) | (R) |
| (b) | (Q) | (P) | (S) | (R) |
| (c) | (Q) | (P) | (R) | (R) |
| (d) | (Q) | (R) | (S) | (P) |

17. Which of the following is not a true statement?

If pH of the mouth exceeds than 5.5 it leads to the formation of cavity in teeth.
 (ii) Milk of magnesia is an antacid.
 (iii) The sting of ant contains methanoic acid.
 (iv) If pH of rain water is less than 5.6 it is termed as acid rain.

- (a) Only statement (i)
 (b) Statement (i) and (iv)
 (c) Only statement (iii)
 (d) Only statement

18. Which of the following indicators is not an acid-base indicator?

- (a) Phenolphthalein (b) Vanilla
 (c) Litmus (d) Methyl orange

19. The pH value of two solutions P and Q are 3 and 5 respectively. Which of the following statements is correct?

- (a) Solution P is twice as acidic as Q.
 (b) Solution Q is twice as acidic as P.
 (c) Solution P is 100 times more acidic than Q.
 (d) Solution Q is 100 times more acidic than P.

20. The H^+ ion concentration of a solution is $2 \times 10^{-8} \text{ mol L}^{-1}$. The pH value of the solution is ($\log_{10} 2 = 0.3010$)

- (a) 7.699 (b) 7.599
 (c) 7.799 (d) 7.899

21. Identify the wrong statement in the following.

- (a) Sodium benzoate is used as food preservative.
 (b) Sulphuric acid is called as the 'King of Chemicals'.
 (c) The pH of acid is equal to 7.
 (d) Curd contains lactic acid.

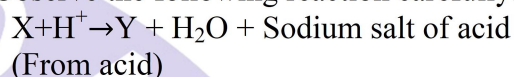
22. A student test the pH of distilled water and found that the colour of pH paper changed to green. He checked the pH again after dissolving a pinch of common salt in water. The colour of pH paper this time will be

- (a) green (b) yellow
 (c) red (d) blue.

23. P is an aqueous solution of acid and Q is an aqueous solution of base. When these two are diluted separately, then

- (a) pH of P increases while that of Q decreases till neutralization
 (b) pH of P decreases while that of Q increases till neutralization
 (c) pH of P and Q decreases
 (d) pH of P and Q increases.

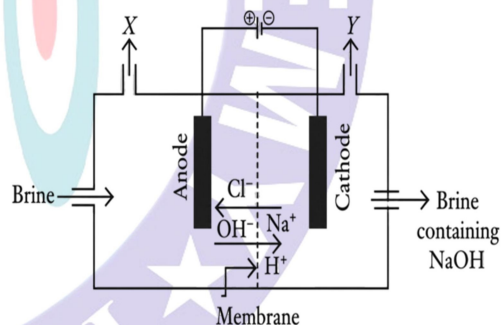
24. Observe the following reaction carefully.



Now, select the correct statement.

- (a) X is a mild corrosive acidic salt and can be used to neutralise a base.
 (b) On heating X during cooking, H_2 gas is produced.
 (c) X is used as an ingredient in antacids and is also used in soda-acid fire extinguishers.
 (d) Y is carbon monoxide gas that makes bread and cakes soft and spongy.

25. Observe the following figure carefully.



Now, select the incorrect statements.

- I. The given experimental set-up shows the formation of baking soda through chlor-alkali process.
 II. The gas X liberated at anode is H_2 while the gas Y liberated at cathode is Cl_2 .
 III. In the given process, electricity is passed through an aqueous solution of sodium chloride.

26. IV. Sodium hydroxide solution is formed near the anode.

- (a) I and III only
 (b) II and IV only
 (c) I, II and IV only
 (d) II, III and IV only

27. Fill in the blanks by selecting an appropriate option. Baking powder is a

mixture of (i) and a mild edible acid such as (ii). When it is heated, (iii) is produced which makes bread and cake soft and spongy.

- | (i) | (ii) | (iii) |
|-------------------------------|---------------|-----------------|
| (a) Sodium hydrogen carbonate | tartaric acid | CO ₂ |
| (b) Sodium carbonate | acetic acid | CO ₂ |
| (c) Sodium hydroxide | acetic acid | H ₂ |
| (d) Sodium chloride | oxalic acid | H ₂ |

28. Fill in the blanks in the given table by selecting an appropriate option.

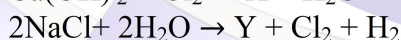
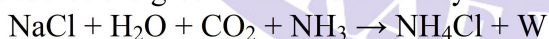
S.No.	Acid	Base	Salt	pH of aq. salt sol
1.	HNO ₃	NH ₄ OH	(i)	<7
2.	H ₂ SO ₄	(ii)	CuSO ₄	(iii)
3.	(iv)	NaOH	Na ₂ CO ₃	(v)
4.	CH ₃ COOH	NH ₄ OH	(vi)	(vii)

- | | (i) | (ii) | (iii) | (iv) | (v) | (vi) | (vii) |
|-----|---------------------------------|---------------------|-------|--------------------------------|-----|------------------------------------|-------|
| (a) | NH ₄ NO ₃ | CuOH | =7 | HCOOH | >7 | CH ₃ COONH ₄ | =7 |
| (b) | NH ₄ NO ₃ | Cu(OH) ₂ | =7 | HCOOH | =7 | CH ₃ COONH ₄ | >7 |
| (c) | NH ₄ NO ₃ | CuOH | <7 | H ₂ CO ₃ | =7 | CH ₃ COONH ₄ | <7 |
| (d) | NH ₄ NO ₃ | Cu(OH) ₂ | <7 | H ₂ CO ₃ | >7 | CH ₃ COONH ₄ | =7 |

29. Four solutions labelled as W, X, Y and Z have pH values 1, 9, 3 and 13 respectively. Which of the following represents the correct decreasing order of hydrogen ion concentration of these solutions?

- (a) Z > X > Y > W
 (b) W > Y > Z > X
 (c) W > Z > Y > X
 (d) W > Y > X > Z

30. Observe the given reactions carefully.



Which of the following shows the correct uses of products W, X and Y?

- (a) W → Faster cooking, X → Fire extinguishers, Y → In water treatment
 (b) W → Ingredient in antacids, X → For bleaching clothes, Y → Paper making
 (c) W → Disinfecting water, X → Baking powder, Y → Fertilisers
 (d) W → Oxidising agent, X → Softening of hard water, Y → Toy making

BIOLOGY

31. Substances necessary for autotrophic nutrition are

- (1) CO₂ and H₂O (2) Chlorophyll

(3) Sunlight (4) All of the above
 32. Organisms capable of synthesizing their own food are called

- (1) Heterotrophs (2) Autotrophs
 (3) Decomposers (4) Parasites

33. Which part of the human alimentary canal, is the site for complete digestion of carbohydrates?

- (a) Stomach (b) Small Intestine
 (c) Large Intestine (d) Rectum

34. Which of the following plant is a parasite?

- (a) Cuscuta (b) Mushroom
 (c) Giloy (d) Fern

35. A food chain always starts with

- (a) Photosynthesis (b) Respiration
 (c) Nitrogen fixation (d) Decay

36. Polythene is a

- (a) Synthetic compound
 (b) Natural compound
 (c) Coolant
 (d) Both (a) and (c)

37. Which of the following groups contain only biodegradable items?

- (a) Grass, flowers and leather
 (b) Grass, wood and plastic
 (c) Fruit peels, cake and plastics
 (d) Cake, wood and glass

38. Biomagnification is mainly due to

- (a) Chlorofluorocarbon compounds
 (b) Carbon monoxide
 (c) Methane
 (d) Pesticides

39. Ecosystem consists of

- (a) Producers (b) Consumers
 (c) Decomposers (d) All of these

40. In grassland ecosystem, the pyramid of biomass is

- (a) Linear (b) Upright
 (c) Inverted (d) None of these

41. In terrestrial ecosystem, maximum energy is present at which trophic level?

- (a) T₃ (b) T₂
 (c) T₁ (d) T₄

42. Energy enters in a food chain through

- (a) Producers (b) Decomposers
 (c) Herbivores (c) Carnivores

43. Organisms of a higher trophic level which feed on several types of organisms belonging to a lower trophic level constitute the

- (a) Food web
 (b) Ecological pyramid

(c) Ecosystem

(d) Food chain

44. If a grasshopper is eaten by a frog, then the energy transfer will be from

(a) Producer to decomposer

(b) Producer to primary consumer

(c) Primary consumer to secondary consumer

(d) Secondary consumer to primary consumer

45. In an ecosystem, the 10% of energy available for transfer from one trophic level to the next is in the form of

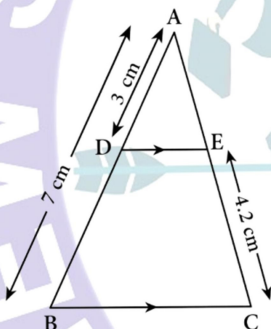
(a) Heat energy (b) Light energy

(c) Chemical energy

(d) Mechanical energy

MATHS

46. In the given figure, $DE \parallel BC$. If $AD = 3\text{ cm}$, $AB = 7\text{ cm}$ and $EC = 3\text{ cm}$ then the length of AE is



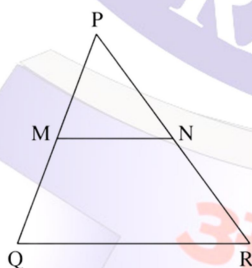
(a) 2 cm

(b) 2.25 cm

(c) 3.5 cm

(d) 4 cm

47. In the adjoining figure, $MN \parallel QR$. If $PN = 3.6\text{ cm}$, $NR = 2.4\text{ cm}$ and $PQ = 5\text{ cm}$ then PM is



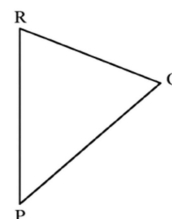
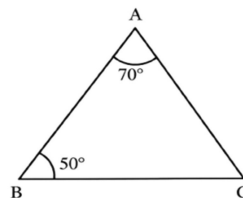
(a) 4 cm

(b) 3.6 cm

(c) 2 cm

(d) 3 cm

48. In the adjoining figure, $\angle ABC \sim \angle QPR$. Then $\angle R$ is



(a) 60°

(b) 50°

(c) 70°

(d) 80°

49. If $\triangle ABC \sim \triangle PQR$ with $\angle A = 32^\circ$ and $\angle R = 65^\circ$ then the measure of $\angle B$ is

(a) 32°

(b) 65°

(c) 83°

(d) 97°

50. In $\triangle ABC$ and $\triangle DEF$, $\frac{AB}{DE} = \frac{BC}{FD}$. Which of the following makes the two triangles similar

(a) $\angle A = \angle D$

(b) $\angle B = \angle D$

(c) $\angle B = \angle E$

(d) $\angle A = \angle F$

51. If in two triangles ABC and PQR , $\frac{AB}{QR} =$

$\frac{BC}{PR} = \frac{CA}{PQ}$ then

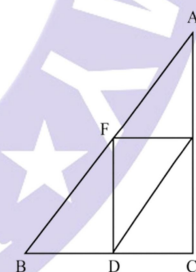
(a) $\triangle PQR \sim \triangle CAB$

(b) $\triangle PQR \sim \triangle ABC$

(c) $\triangle CBA \sim \triangle PQR$

(d) $\triangle BCA \sim \triangle PQR$

52. In the adjoining figure, if D , E and F are mid-points of the sides BC , CA and AB respectively, then the two triangles ABC and DEF are



(a) similar

(b) congruent

(c) both similar and congruent

(d) neither similar nor congruent

53. If $\triangle PQR \sim \triangle ABC$, $PQ = 6\text{ cm}$, $AB = 8\text{ cm}$ and perimeter of $\triangle ABC$ is 36 cm , then perimeter $\triangle PQR$ is

(a) 20.25 cm

(b) 27 cm

(c) 48 cm

(d) 64 cm

54. $ABCD$ is a trapezium with $AD \parallel BC$ and $AD = 4\text{ cm}$. If the diagonals AC and BD intersect each other at O such that $\frac{AO}{OC} =$

$\frac{DC}{OB} = \frac{1}{2}$ then $BC =$

(a) 6 cm

(b) 7 cm

(c) 8 cm

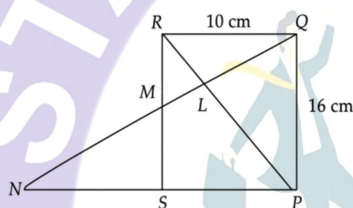
(d) 9 cm

55. $\triangle ABC \sim \triangle PQR$. If AM and PN are altitudes of $\triangle ABC$ and $\triangle PQR$ respectively and $AB^2 / PQ^2 = 4/9$ then $AM : PN =$
 (a) 3:2 (b) 16:81
 (c) 4:9 (d) 2:3

56. In $\triangle ABC$ $\angle B = 90^\circ$ and $BD \perp AC$. If $DC = 7\text{cm}$ and $AD = 3\text{cm}$ then the length of BD is

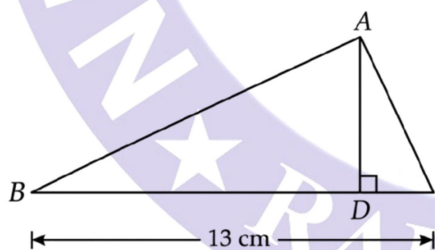
- (a) $\sqrt{23}\text{ cm}$ (b) $\sqrt{21}\text{ cm}$
 (c) $\sqrt{7}\text{ cm}$ (d) 21 cm

57. In the given figure, PQRS is a parallelogram with $PQ = 16\text{cm}$ and $QR = 10\text{ cm}$. L is a point on PR such that $RL : LP = 2:3$. QL is produced to meet RS at M and PS produced at N. Find the length of PN and RM (in cm) respectively.



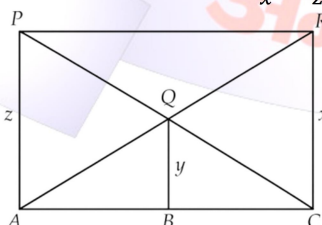
- (a) $16, 10\frac{2}{3}$ (b) $10, 10\frac{2}{3}$
 (c) $15, 10\frac{2}{3}$ (d) $15, \frac{1}{3}$

58. $\triangle ABC$ is right angled at A and $AD \perp BC$. If $BC = 13\text{ cm}$ and $AC = 5\text{ cm}$, the ratio of the areas of $\triangle ABC$ and $\triangle ADC$ is



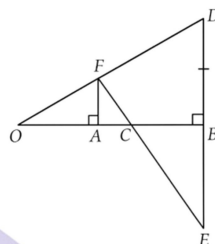
- (a) 25:169 (b) 169:25
 (c) 5:12 (d) 13:5

59. In the given figure, PA, QB and RC are perpendicular to AC. Then $\frac{1}{x} + \frac{1}{z} =$



- (a) $1/5y$ (b) $1/2y$
 (c) $1/y$ (d) None of these

60. In the given figure, OB is perpendicular bisector of the line segment DE, $FA \perp OB$ and FE intersects OB in C. Then $\frac{1}{OA} + \frac{1}{OB} =$



- (a) 0 (b) OC
 (c) $\frac{2}{OC}$ (d) None of these