

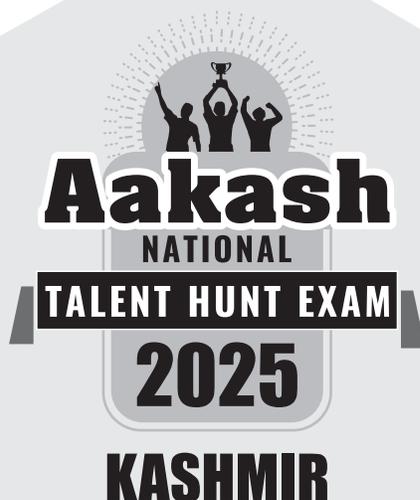
Sample Paper

MEDICAL



Aakash

Medical | IIT-JEE | Foundations



(Class X Studying Moving to Class XI)

Physics, Chemistry, Biology & Mental Ability

INSTRUCTIONS FOR CANDIDATE

1. Duration of Test is 1 hr.
2. The Test Booklet consists of **40** questions. The maximum marks are **90**. There is **no negative marking** for wrong answer.
3. Pattern of the questions are as under:
 - (i) The question paper consists of four parts *i.e.*, **Physics, Chemistry, Biology and Mental Ability**. Each part has **two sections**.
 - (ii) **Section-I**: This section contains **35** multiple choice questions, which have **only one** correct answer. Each question carries **+2 marks** for correct answer.
 - (iii) **Section-II**: This section contains **5** multiple choice questions, in which **one or more than one** choice(s) is(are) correct. Each question carries **+4 marks** for correct answer.

Aakash National Talent Hunt Exam (Kashmir)-2025 Sample Paper

(Class X Studying Moving to Class XI)

(The questions given in sample paper are indicative of the level and pattern of questions that will be asked in ANTHE (Kashmir)-2025)

Time : 1 Hour

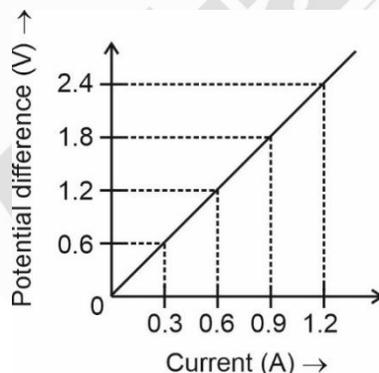
PHYSICS

MM : 90

SECTION-I : SINGLE CORRECT ANSWER TYPE

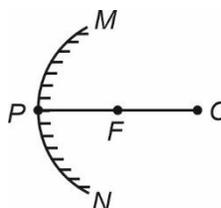
This section contains 9 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

- In moving a charge of 3 C across a battery, 300 J of energy is dissipated. If the negative terminal of the battery is at an electric potential of -20 V, then the electric potential of the positive terminal is
 (1) 40 V (2) 20 V
 (3) 60 V (4) 80 V
- Time taken by a laser beam to travel a distance of 5 km under water having refractive index $\frac{4}{3}$, will be
 (1) 4×10^{-4} s (2) 4×10^{-5} s
 (3) 2.2×10^{-4} s (4) 2.2×10^{-5} s
- The variation of potential difference (V) with current (I) flowing through a metallic wire is shown in the figure. The resistance of the wire is



- The resistance of the wire is
 (1) 1Ω (2) 2Ω
 (3) 3Ω (4) 4Ω
- A far-sighted person uses a lens of power 2 D to correct his vision. The near point of the person without using the lens is
 (1) 0.5 m (2) 1 m
 (3) 1.5 m (4) 1.75 m
- For the convex mirror shown in the figure, the aperture is represented by

- (1) PF
- (2) MN
- (3) PC
- (4) FC

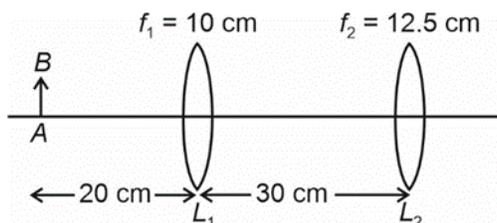


6. Which of the following statements is incorrect?
- (1) The resistance of a conductor depends on the nature of material
 - (2) Both the resistance and resistivity of a material vary with temperature
 - (3) Resistivity is a characteristic property of a material
 - (4) The resistivity of an alloy is generally lower than that of its constituent metals
7. In which of the following defects of vision the far point is less than infinity?
- (1) Cataract
 - (2) Presbyopia
 - (3) Myopia
 - (4) Hypermetropia
8. A spherical lens has power +2.5 D, then its focal length is
- (1) 25 cm
 - (2) 20 cm
 - (3) 40 cm
 - (4) 10 cm
9. Which of the following colour of light has maximum wavelength?
- (1) Blue
 - (2) Orange
 - (3) Green
 - (4) Violet

SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

10. Two convex lenses L_1 , L_2 and an object AB are arranged as shown in figure. The correct option(s) is/are



- (1) Lens L_1 forms a real image of the object
- (2) Distance of real image from lens L_1 is 20 cm
- (3) Lens L_2 forms a virtual image
- (4) Distance of virtual image from lens L_1 is 20 cm

CHEMISTRY

SECTION-I : SINGLE CORRECT ANSWER TYPE

This section contains 9 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

11. Shyam mixed 2 mL aqueous solution of potassium sulphate with 2 mL aqueous solution of barium chloride. The reaction can be classified as
- (1) Combination reaction (2) Decomposition reaction
(3) Precipitation reaction (4) Redox reaction
12. Which of the following is correctly arranged on the basis of increasing pH value?
- (1) Lemon juice, gastric juice, pure water (2) Pure water, milk of magnesia, 1M HCl
(3) Milk of magnesia, 1M NaOH, gastric juice (4) Gastric juice, pure water, milk of magnesia
13. Consider the following reactions:
- $$X(s) + YSO_4(aq) \rightarrow XSO_4(aq) + Y(s)$$
- $$Y(s) + ZSO_4(aq) \rightarrow YSO_4(aq) + Z(s)$$
- $$PSO_4(aq) + Z(s) \rightarrow ZSO_4(aq) + P(s)$$
- $$QSO_4(aq) + X(s) \rightarrow \text{No reaction}$$
- Now, choose the correct option.
- (1) The correct order of reactivity is $X > Y > Z > P > Q$
(2) The correct order of reactivity is $Q < X < Y < P < Z$
(3) P, Q, X, Y and Z can be Cu, Na, Ca, Mg and Al respectively
(4) X, Y, Z, P and Q can be Na, K, Mg, Ag and Cu respectively
14. Consider the following reaction and the relevant statements given below
- $$MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$$
- I. HCl is oxidised to Cl_2 II. HCl is an oxidising agent
III. MnO_2 is reduced to $MnCl_2$ IV. MnO_2 is reducing agent
- The correct statements are
- (1) I and II (2) II and III
(3) I and III (4) II and IV
15. Which of the following sets of compounds react to form ammonium chloride and baking soda?
- (1) NaCl, O_2 , CO and H_2O (2) NH_3 , NaOH, Cl_2 and O_2
(3) NaCl, HCl, H_2O and CO_2 (4) NaCl, H_2O , CO_2 and NH_3
16. All of the following are the alloys, **except**
- (1) 22 carat gold (2) Cinnabar
(3) Brass (4) Solder
17. Consider the following chemical equation
- $$aNH_3 + bO_2 \rightarrow cNO + dH_2O$$
- On balancing
- (1) $a : b = 4 : 3$ (2) $b : c = 5 : 6$
(3) $c + d > a + b$ (4) $a + b = c + d$

18. When limestone is heated strongly, it gives a gaseous product 'X' and a solid product 'Y'. 'Y' combines with water to give 'Z'. Which of the following is/are correct about 'X', 'Y' and 'Z'?
- 'X' is CO_2 and 'Y' is quick lime.
 - 'Z' combines with chlorine gas to give bleaching powder.
 - 'X' is a basic oxide.
- (1) Only I (2) Only II
(3) I and II (4) II and III
19. You are provided with two containers made up of iron and copper along with four solutions dil. HNO_3 , dil. HCl , $\text{ZnSO}_4(\text{aq})$ and H_2O . Which of the following suggestions will help you to store them?
- $\text{ZnSO}_4(\text{aq})$ and H_2O can be stored in both the containers but dil. HNO_3 can be stored only in iron container.
 - All the solutions can be well stored in both the containers
 - Dil. HCl , $\text{ZnSO}_4(\text{aq})$ and H_2O can be stored in copper container but dil. HNO_3 cannot be stored in it.
 - $\text{ZnSO}_4(\text{aq})$ and H_2O cannot be stored in the iron container.

SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

20. Consider the following elements and their electronic configuration

K	L	M
A = x	x^3	$x - 1$
B = x	$x^3 - 2$	
C = x	$2x^2$	$2x^2 - 1$

Now, choose the correct option(s).

- 'A' is an alkali metal whereas 'B' and 'C' are the non-metals.
- 'B' and 'C' require 2 and 1 more electrons respectively to complete their octet.
- 'A' combines with 'B' and 'C' to form compounds ' A_2B ' and ' AC ' which are soluble in water.
- Compound formed between 'A' and 'B' is acidic in nature.

BIOLOGY

SECTION-I : SINGLE CORRECT ANSWER TYPE

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

21. The (i) in the cell nucleus is the information source for making proteins. Here, (i) is
- ADP (2) Glucose
 - Starch (4) DNA
22. Select the correct option w.r.t. the flow of information in a neuron.
- Dendrite → Cell body → Axon → Nerve ending
 - Axon → Dendrite → Nucleus → Nerve ending
 - Nerve ending → Cell body → Axon → Dendrite
 - Nucleus → Cell body → Dendrite → Nerve ending

23. Plants show phototropism in response to
- | | |
|-------------|-----------|
| (1) Gravity | (2) Water |
| (3) Light | (4) Touch |
24. Select the **incorrect** statement w.r.t. lymph.
- (1) It contains more proteins than blood
 - (2) It is colourless
 - (3) It drains excess fluid from extracellular space back into the blood
 - (4) It carries digested and absorbed fat from intestine
25. Select the **odd** one out w.r.t. parts associated with human excretory system.
- | | |
|---------------|---------------------|
| (1) Kidney | (2) Urinary bladder |
| (3) Diaphragm | (4) Ureter |

26.



How many of the below given statements (i-v) is(are) true w.r.t. the above depicted organism?

- (i) It is a unicellular organism.
- (ii) It reproduces by means of binary fission.
- (iii) It is a malarial parasite.
- (iv) It possesses specialized cells for regeneration.
- (v) It is the causative agent of kala-azar.

- | | |
|---------|-----------|
| (1) One | (2) Four |
| (3) Two | (4) Three |

27. All of the following floral appendages shrivel and fall off after fertilization, **except**

- | | |
|-----------|------------|
| (1) Petal | (2) Stamen |
| (3) Ovule | (4) Style |

28. Consider the given representation.



Here, **X** is

- | | |
|-----------------|------------------|
| (1) 300 J/mol | (2) 30.5 kJ/mol |
| (3) 3.05 kJ/mol | (4) 300.5 kJ/mol |

29. Which of the following materials is not taken by plants from the soil?

- | | |
|------------|---------------|
| (1) Starch | (2) Nitrogen |
| (3) Iron | (4) Magnesium |

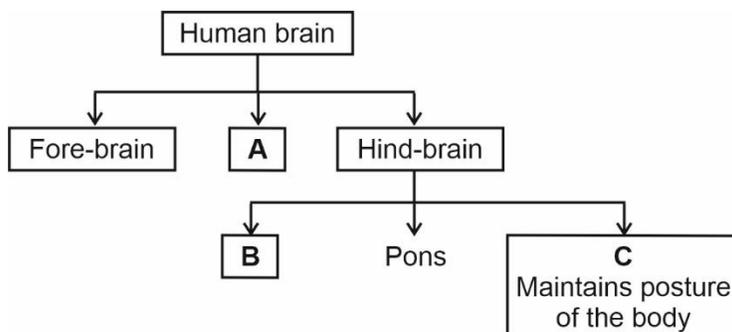
30. Pancreas secretes pancreatic juice which contains enzymes like (i) for digesting proteins and (ii) for breaking down emulsified fats. Identify (i) and (ii) respectively and select the correct option.

- | | |
|---------------------------|----------------------------|
| (1) Pepsin and lipase | (2) Bile salts and trypsin |
| (3) Pepsin and bile salts | (4) Trypsin and lipase |

SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE

This section contains 2 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

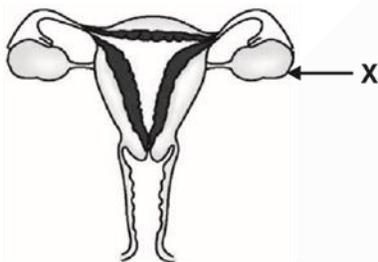
31. Consider the given representation.



Select the correct statement(s) w.r.t. the parts **A**, **B** and **C** in the above given flow chart.

- (1) **B** is medulla which maintains balance of the body
- (2) **A** regulates involuntary actions of the body
- (3) **C** has a specialised centre associated with the hunger
- (4) **C** is cerebellum which is responsible for precision of voluntary actions

32.



The labelled part '**X**' in the above given figure is involved in

- (1) Carrying egg to the womb
- (2) Nourishing the embryo
- (3) Formation of female germ cells
- (4) Production of sex hormones

MENTAL ABILITY**SECTION-I : SINGLE CORRECT ANSWER TYPE**

This section contains 7 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

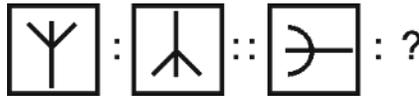
33. Ram is brother of Geeta. Geeta is daughter of Meena. Mohan is son of Meena. Sintu and Rinku are sons of Ram. Jyoti is daughter of Geeta. Pinku is son of Rakesh, who is husband of Geeta. Who is cousin of Sintu?
- (1) Pinku
 - (2) Meena
 - (3) Rinku
 - (4) Mohan

34. Find the next term.

D40J, H112N, L216R, P352V, ?

- (1) U525Y
- (2) T520Z
- (3) Z502T
- (4) U21A

35. Choose the correct option in place of (?).



- (1)
- (2)
- (3)
- (4)

36. In a certain code language 'NUMBER' is coded as 'SFCNVO' and 'ANALOGY' is coded as 'ZHPMBOB', then 'ALPHABET' is coded as

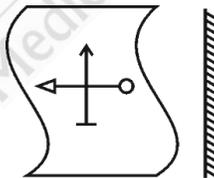
- (1) UFCBQIMB
- (2) GVCBIQMB
- (3) BMQIBCFU
- (4) UFCBIQMB

37. Four friends Raj, Rohan, Rani and Rohit play different games namely Cricket, Hockey, Basketball, Badminton not necessarily in the same order.

Rohan does not play Cricket and Hockey. Raj plays Badminton. Rani does not play Hockey and Basketball. Which game is played by Rani?

- (1) Cricket
- (2) Hockey
- (3) Badminton
- (4) Basketball

38. Choose the correct mirror image.



- (1)
- (2)
- (3)
- (4)

39. Study the given information carefully and answer the following question.

Marks of Rahul obtained in different classes out of 500.

Class	10 th	9 th	8 th	7 th	6 th	5 th
Marks	482	385	390	450	475	490

By what percent the total marks obtained by Rahul in Class 9th, 8th and 5th altogether is more than the total marks obtained in class 10th and 7th together?

- (1) 28.78% (2) 35.73%
(3) 42.69% (4) 84.76%

SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

40. If $4\sqrt{8}9 = 137$, $5\sqrt{6}4 = 165$ and $8\sqrt{7}4 = 565$, then which option(s) follow(s) the same operation?

- (1) $6\sqrt{5}9 = 250$ (2) $8\sqrt{3}7 = 546$
(3) $7\sqrt{8}3 = 410$ (4) $9\sqrt{8}7 = 800$


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