SYNERGY ACADEMY®

NEET-UG I JEE (Main | Advanced) | Board Examinations (X | XII) | KVPY
Pre-Foundation I Olympiads | (8th | 9th | 10th)

Giving Direction to Your Goals

SURE TEST - CBSE Board - Sample Paper

Date: **Max Marks: 120**

Batch: Class X to Class XI moving students **Max Time: 1 hr 15 min**

INSTRUCTIONS

Sr. No	Subject	Number Of Questions	Marks (Each Question carries 03 Marks)	Type Of Question(s)
1.	PHYSICS	06	18	MCQ (Multiple Choice Questions)
2.	CHEMISTRY	07	21	
3.	BIOLOGY	07	21	
4.	MATHEMATICS	08	24	
5.	MENTAL ABILITY	12	36	
		TOTAL	**120**	

Important Points to Note:

(i) Duration of Test is **1 hour (Reading Time -15 minutes)**

(ii) The Test Booklet consists of **40 questions.** The maximum marks are **120**. There is **no negative** marking for incorrect answers.

(iii) **Pattern of the questions are as under:**

(a) The question paper consists of **Five** parts i.e., **(Physics, Chemistry, Biology, Mathematics and Mental Ability).**

(b) Paper contains 40 MCQ'S which have **only one correct answer**, each question carries **+3 marks** for **correct answer.**

(iv) Use of calculators and electronic devices is prohibited.

Thank you for your participation and good luck!

SYNERGY APTITUDE CUM SCHOLARSHIP EXAM

SYNER-G

Searching Your InNER Genius

2025

PHYSICS

Q.1 The speed of light in substance X is 1.25×10^8 m/s and that in air is 3×10^8 m/s. The refractive index of this substance will be:
(A) 3.75 (B) 2.4 (C) 0.4 (4) 4.2

Q.2 An object is kept at a distance more than twice the focal length (F) from a concave mirror. The image will be formed at a distance:
(A) Between F and 2F (B) Equal to F
(C) More than 2F (D) Less then F

Q.3 Which of the following is likely to be the correct wattage for an electric iron used in our homes?
(A) 60 W (B) 2000 W (C) 850 W (D) 250 W

Q.4 The elements of electric heating devices are usually made of:
(A) Nichrome (B) Bronze (C) Argon (D) Tungsten

Q.5 A coil of many circular turn wrapped around a insulator forms a
(A) Solenoid (B) Bar magnet (C) Circular magnet (D) U-shaped magnet

Q.6 The magnetic field lines due to straight wire carrying a current are
(A) Parabolic (B) Straight (C) Circular (D) Elliptical

CHEMISTRY

Q.7 Which of the following statement
is correct for the water with detergents dissolved in it?
(A) Low concentration of hydroxide ion (OH^-) and high concentration of hydronium ion (H_3O^+)
(B) High concentration of hydroxide ion (OH^-) and low concentration of hydronium ion (H_3O^+)
(C) High concentration of hydroxide ion (OH^-) as well as hydronium ion (H_3O^+)
(D) Equal concentration of both hydroxide ion (OH^-) and hydronium ion (H_3O^+)

Q.8 The table provides the pH value of four solutions P, Q, R, and S. Which of the following correctly represents the solutions in increasing order of their hydronium ion concentration

Solution	pH value
P	2
Q	9
R	5
S	11

(A) P > Q > R > S (B) P > S > Q > R (C) S < Q < R < P (D) S < P < Q < R

Q.9 The colour of the solution observed after 30 minutes of placing zinc metal to copper sulphate solution is:
(A) Blue (B) Colourless (C) Dirty green (D) Reddish – brown

Q.10 The pair(s) which will show displacement reaction is/are:
(i) NaCl solution and copper metal
(ii) $AgNO_3$ solution and copper metal
(iii) $Al_2(SO_4)_3$ solution and magnesium metal
(iv) ZnSO4 solution and iron metal
(A) (ii) only (B) (ii) and (iii) (C) (iii) and (iv) (D) (i) and (ii)

Q.11 On adding dilute sulphuric acid to a test tube containing a metal 'X', a colourless gas is produced when a burning match stick is brought near it. Which of the following correctly represents metal 'X'?
(A) Sodium (B) Zinc (C) Copper (D) Silver

Q.12 Bronze is an alloy of:
(A) Copper and zinc
(B) Aluminium and tin
(C) Copper, tin and zinc
(D) Copper and tin

Q.13 Which of the following is an example of simple displacement reaction?
(A) The electrolysis of water
(B) The burning of methane
(C) The reaction of a metal with an acid
(D) The reaction of two solutions to form a precipitate

BIOLOGY

Q.14 Given below are two columns, Column I shows enzymes secreted by the glands in the alimentary canal of human beings and Column II indicates the components of food on which enzymes act. Choose the options showing correct matching.

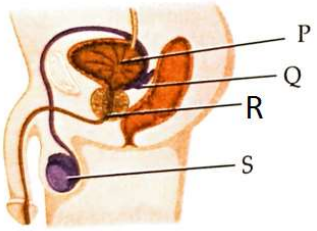
	Column I (Enzymes)	**Column II (Component)**
(A)	Pepsin	Starch
(B)	Trypsin	Proteins
(C)	Lipase	Proteins
(D)	Amylase	Emulsified fat

Q.15 In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:
Assertion (A): Resins and gums are stored in old xylem tissue in plants.
Reason (R): Resins and gums facilitate transport of water molecules.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is NOT the correct explanation of A.
(C) A is true but R is false.
(D) A is false and R is true.

Q.16 The growth of tendril in pea plants is due to:
(A) Effect of light
(B) Effect of gravity
(C) Rapid cell divisions in tendrillar cells that are away from the support.
(D) Rapid cell divisions in tendrillar cells in contact with the support.

Q.17 **Directions:** In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:
Assertion (A): Nerve impulse is a one way conduction.
Reason (R): Nerve impulse in transmitted from dendrite to axon terminals.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is NOT the correct explanation of A.
(C) A is true but R is false.
(D) A is false and R is true.

Q.18 The diagram below represents the male human reproductive system.



Identify the part that is responsible for the secretion of testosterone.

(A) P (B) Q (C) R (D) S

Q.19 A zygote which has an X-chromosome inherited from the father will develop into a:

(A) A boy
(B) A girl
(C) X-chromosome does not determine the sex of a child
(D) Either boy or girl

Q.20 In 1987, an agreement was formulated by the United Nations Environment Programme (UNEP) to freeze the production of 'X' to prevent depletion of 'Y'. 'X' and 'Y' respectively referred here are:

(A) Ozone; CFCs (B) CFCs; rays UV
(C) CFCs; Ozone (D) UV rays; Diatomic oxygen

MATHEMATICS

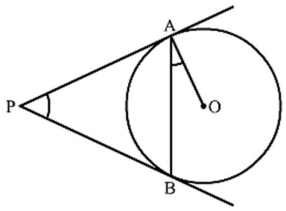
Q.21 Area of a sector of angle p (in degree) of circle with radius R is:

(A) $\frac{p}{180^\circ}\times 2\pi R$ (B) $\frac{p}{360^\circ}\times 2\pi R$ (C) $\frac{p}{180^\circ}\times \pi R^2$ (D) $\frac{p}{720^\circ}\times 2\pi R^2$

Q.22 The shadow of a tower standing on a level plane is found to be 50 m longer when the Sun's elevation is 30^0, then when it was 60^0. What is the height of the tower?

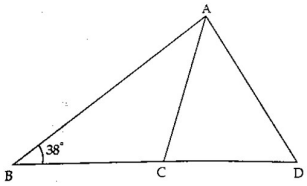
(A) 25 m (B) $\frac{25}{\sqrt{3}}$ m (C) $25\sqrt{3}$ m (D) 30 m

Q.23 In the given figure, PA and PB are tangents to the circle with centre O. If $\angle APB = 60^\circ$, then $\angle OAB$ is:



(A)30^0 (B) 90^0 (C) 60^0 (D) 15^0

Q.24 In the given figure, if, $\angle B = 38^\circ$, AC = BC and AD = CD, then $\angle D$ equals to:



(A) 26^0 (B) 38^0 (C) 28^0 (D) 52^0

Q.25 If the sum of three consecutive terms of an increasing A.P. is 51 and the product of the first and third of these terms is 273, then the third term is:
(A) 13 (B) 21 (C) 9 (D) 17

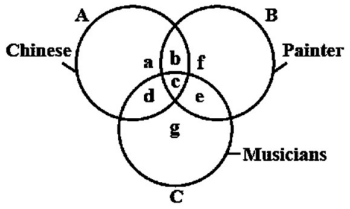
Q.26 If the zeroes of the quadratic equation $x^2 + (a+1)x + b + 1 = 0$ are 2 and –3, then the values of a and b are _____ and _____ respectively.
(A) 0, 7 (B) 2, 3 (C) 0, – 7 (D) None of these

Q.27 The roots of the equation where p is a constant are:
(A) p, p + 1 (B) p, – (p + 1) (C) – p, p + 1 (D) – p, – (p + 1)

Q.28 Water flows at the rate of 10 metre per minute from a cylindrical pipe 5 mm in diameter. How long will it taken to fill up a conical vessel whose diameter at the base is 40 cm and depth 24 cm?
(A) 48 minutes 15 sec (B) 51 minutes 12 sec
(C) 52 minutes 1 sec (D) 55 minutes

MENTAL ABILITY

Q.29 Chinese who are painters as well as musicians –



(A) a (B) b (C) c (D) d

Q.30 A clock loses 5 min for every hour and another gains 5 min for every hours. If they are set correct at 10 am on Monday then when will they be 12 hrs apart?
(A) 10 am on Thursday (B) 10 am on Wednesday
(C) 10 am on Tuesday (D) 10 am on Monday

Q.31 In the matrix given below, the values of A, B and C are

9	A	12
B	10	7
8	C	11

(A) A = 13, B = 11, C = 9 (B) A = 13, B = 9, C = 11
(C) A = 9, B = 11, C = 13 (D) A = 9, B = 13, C = 11

Q.32 Six persons P, Q, R, S, T and U are sitting in a circle facing one another front to front. P is sitting front Q. Q is sitting to the right of T and left of R. P is to the left of U and right of S.
Who is sitting opposite to R?
(A) P (B) Q (C) S (D) U

Q.33 In the question below are given two statements and two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements.

(1) Only conclusion I follows (2) Only conclusion II follows
(3) Both I and II follow (4) Neither I nor II follows.

Statements: All envelopes are umbrellas. All umbrellas are chalks.

Conclusions: I)Some chalks are envelopes.
II) Some umbrellas are not envelopes.

(A) I (B) II (C) Both I & II (D) None of these

Q.34 In the group of words given below all except one, share a common similarity. Select the odd one. Three terms are alike in certain way and one is different, find that odd/wrong/different term.

(A) ANRYAAH (B) DGRHAAIHCN (C) ANHTAJASR (D) BNJUAP

Q.35 If in a code language STAR = 50 and CIRUS = 65 then PLANET will be

(A) 68 (B) 78 (C) 84 (D) 94

Q.36 The question are based on a dice numbered 1 to 6 in different ways as indicated
The question are based on a dice numbered 1 to 6 in different ways as indicated.
If 1 is opposite to 5 and 2 is opposite to 3, then

(A) 4 is adjacent to 3 and 6 (B) 2 is a adjacent to 4 and 6
(C) 4 is adjacent to 5 and 6 (D) 6 is adjacent to 3 and 4

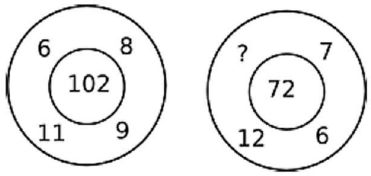
Q.37 You go North, turn right, then right again and then go to the left. In which direction are you now?

(A) North (B) South (C) East (D) West

Q.38 Six persons P, Q, R, S, T and U are sitting in a circle facing one another front to front. P is sitting front Q. Q is sitting to the right of T and left of R. P is to the left of U and right of S.
If the positions of P and R are ex-changed, who will be sitting between S and U?

(A) P (B) R (C) Q (D) T

Q.39 Find the missing number in the second figure on the basis of the number arranged in the first figure



(A) 10 (B) 46 (C) 12 (D) 36

Q.40 If Ajit is the brother of the son of Sethi's son, what is the relationship between Ajit and Sethi?

(A) Cousin (B) Grandson (C) Brother (D) Nephew