SHRI NFDA
Scholarship Cum Admission
Test 2025

Sample Paper

Medical

(Class XI Studying, Moving to Class XII)

Physics, Chemistry, Biology, Logical Reasoning & General Ability

----

INSTRUCTIONS FOR CANDIDATE

1. Duration of the test 1 hr
2. The paper consists of four sections: - Physics, Chemistry, Biology and Mental Ability.
3. The Test Booklet consists of **25** questions. The maximum marks are **100**. There is **no negative marking** for wrong answer.
4. There is only one correct answer hence mark one choice only. Darken your choice in OMR Sheet with Blue/Black Ball Point Pen. Return the OMR Sheet & Question Paper to the invigilator at the end of the exam.

Shri NFDA Scholarship cum Admission Test
Sample Paper

(Class XI Studying, Moving to Class XII)

(The questions given in sample paper are indicative of the level and pattern of questions that will be asked in SN-SAT - 2025)
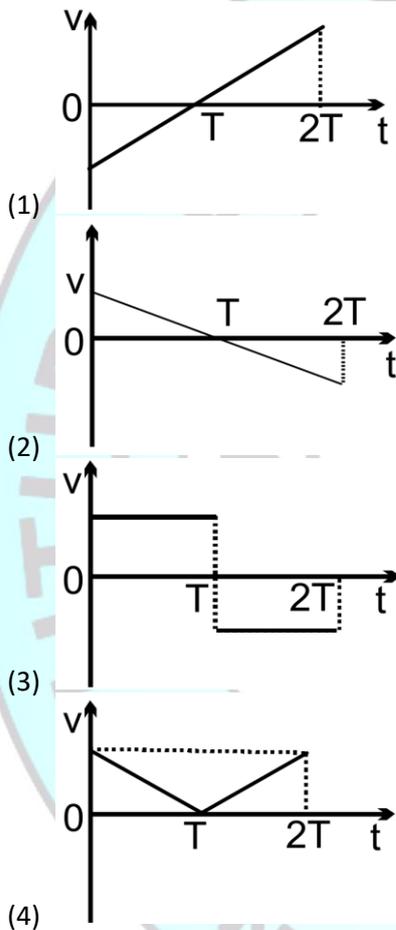
Time: 1hr   **MM: 100**

Section: I (Physics)

This section contains 6 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

1. A body moves from point P to Q under the action of a force varying in magnitude with displacement as shown in figure. The work done by the force is
   (1) 15 J
   (2) 25 J
   (3) 32 J
   (4) 45 J

2. Kinetic energy of a particle changes from 2 J to 5 J. The work done by forces acting on this particle will be
   (1) 2 J
   (2) 7 J
   (3) 5 J
   (4) 3 J

3. Moment of inertia of a uniform circular disc of mass m and radius R about an axis through centre and perpendicular to plane is
   (1) $\frac{5}{4}mR^2$
   (2) $\frac{mR^2}{4}$
   (3) $\frac{3}{2}mR^2$
   (4) $\frac{mR^2}{2}$

4. The force of gravitation between two bodies does not depend upon
   (1) The separation between them
   (2) The gravitational constant
   (3) The product of their masses

(4) The sum of their masses

5. Gravitational force _____ on the nature of the medium between the masses.
   (1) depends
   (2) does not depend
   (3) sometimes depends
   (4) none of these

6. The v-t graph of the particle is correctly shown by

(1)

(2)

(3)

(4)

Section: II (Chemistry)

This section contains 6 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

7. Which of the following has a maximum number of molecules?
   (1) 7g N_2
   (2) 2g H_2
   (3) 16g NO_2

(4) 16g O_2

8. The maximum number of atomic orbitals associated with the principal quantum number five is –
   (1) 9
   (2) 12
   (3) 16
   (4) 25

9. The most non – metallic element among the following is:
   (1) Be
   (2) B
   (3) Mg
   (4) Al

10. Which of the following is not isostructural with $SiCl_4$?
    (1) SCl_4
    (2) SO_4^{2-}
    (3) PO_4^{3-}
    (4) NH_4^+

11. When an ideal gas is compressed adiabatically and reversibly, the final temperature is
    (1) higher than the initial temperature
    (2) lower than the initial temperature
    (3) the same as the initial temperature
    (4) dependent on the rate of compression

12. The hydrolysis of the salt of a strong acid and a weak base is called
    (1) Anionic hydrolysis
    (2) Cationic hydrolysis
    (3) Amphoteric hydrolysis
    (4) None of the above

Section: III (Biology)

This section contains 6 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

13. In the taxonomic categories which hierarchical arrangement in ascending order is correct in case of animals?
    (1) Kingdom, Phylum, Class, Order, Family, Genus, Species
    (2) Kingdom, Class, Phylum, Family, Order, Genus, Species
    (3) Kingdom, Order, Class, Phylum, Family, Genus, Species

(4) Kingdom, Order, Phylum, Class, Family, Genus, Species

14. Match List I with List II

	List-I		List-II
A.	Nucleolus	I.	Site of formation of glycolipid
B.	Centriole	II.	Organization like the cartwheel
C.	Leucoplasts	III.	Site for active ribosomal RNA synthesis
D.	Golgi apparatus	IV.	For storing nutrients

Choose the correct answer from the options given below:

(1) A-III, B-II, C-IV, D-I
(2) A-II, B-III, C-I, D-IV
(3) A-III, B-IV, C-II, D-I
(4) A-I, B-II, C-III, D-I

15. True nucleus is absent in –
(1) Protista
(2) Prokaryotes
(3) Fungi
(4) Algae

16. Cell wall of most algae is made of
(1) Cellulose & pectose
(2) Peptidoglycan
(3) Chitin
(4) Protein

17. Given below are two statements:

Statement I: During G_0 phase of cell cycle, the cell is metabolically inactive.

Statement II: The centrosome undergoes duplication during S phase of interphase.

In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement I and Statement II are incorrect.
(2) Statement I is correct but Statement II is incorrect.
(3) Statement I is incorrect but Statement II is correct.

(4) Both Statement I and Statement II are correct

18. Angiosperms differ from gymnosperms in having
    (1) Seeds
    (2) Flower
    (3) Cones
    (4) True roots

Section: IV (Logical Reasoning & General Ability)

This section contains 6 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

19. In a certain code language, '-' represents 'x', '÷' represents '+', '+' represents '÷' and 'x' represents '-'. Find out the answer to the following question. 2 x 12 ÷ 32 − 5 + 4 = ?
    (1) 17
    (2) 34
    (3) 28
    (4) 30

20. A woman while shopping in a mall pushes her trolley 20 metres through an alley which is going East, then she turns to her left and walks 30 metres, then she turns West and walks another 30 metres, then she turns South and walks 30 metres and then she turns West and walks 25 metres. Where is she now with reference to her starting position?
    (1) 35 metres West
    (2) 5 metres West
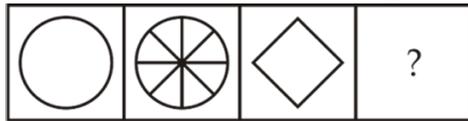   (3) 35 metres East
    (4) 5 metres East

21. In the following question, select the odd word from the given alternatives.
    (1) Ocean
    (2) Sea
    (3) Desert
    (4) River
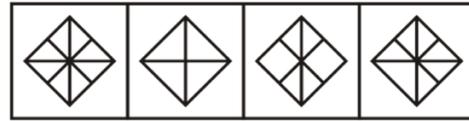
22. In the following question, select the missing number from the given series. 13, 17, 19, 23, 29?
    (1) 33
    (2) 31
    (3) 35
    (4) 37

23. Select a suitable figure from the answer figures that would replace the question mark (?)
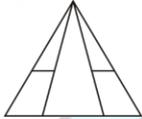
(1) 1
(2) 2
(3) 3
(4) 4

24. How many triangles are there in the given figure?

(1) 8
(2) 7
(3) 9
(4) 6

25. Shakti runs 20m towards East and turns to right runs 10m and again turns to right, runs 9 m and turns to left, runs 5 m and then again turns left, runs 12m and finally turns left and runs 6m. In which direction is he facing now?
(1) East
(2) West
(3) North
(4) South