

NSO CLASS 9

Total Questions: 50

Time: 1hr.

Section – 1 : Verbal and Non-Verbal Reasoning.

Section – 2 : Motion, Force and Laws of Motion, Gravitation, Work and Energy, Sound, Matter in Our Surroundings, Is Matter Around Us Pure, Atoms and Molecules, Structure of Atom, Cell-The Fundamental Unit of Life, Tissues, Diversity in Living Organisms, Why Do We Fall Ill, Natural Resources, Improvement in Food Resources.

Section – 3 : Higher Order Thinking Questions - Syllabus as per Section – 2.

SECTION 01 LOGICAL REASONING

1. In the given question, which pair of numbers is different from the other three.

- A. 2197
- B. 2744
- C. 3375
- D. 4096

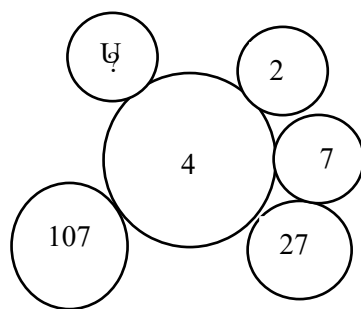
2. Keshav is taller than Vijay but shorter than Nitin, Nitin is taller than Kishan but shorter than Amar. If Vijay is taller than Kishan, then who is the shortest among them?

- A. Keshav
- B. Vijay
- C. Nitin
- D. Kishan

3. **Directions :** Choose the odd one out from the following :

- A. Taste
- B. Chew
- C. Gulp
- D. Swallow

4. **Directions :** Find the missing number in each of the following figure



- A. 407
- B. 427
- C. 417
- D. 327

Directions (Q. 5 to 6) : Study the alpha-numeric series and answer the questions given below :
EF7298AG43BMDNI6QR39XS8UZLH938T54YW

5. How many digits are there which are immediately preceded by a vowel but not followed by a digit?

- A. 0
- B. 2
- C. 1
- D. 3

6. How many vowels are immediately followed by an even number?

- A. 1
- B. 2
- C. 3
- D. 4

Directions (7-10) : In the following questions, two columns I and II have been given. In column I few words are given and in column II their codes have been given using a particular rule. The order of the smaller letter have been placed in jumbled up form. Decode the language and choose the alternative which is equal to the letter asked in the questions.

Column I

- (1) DESIGN
- (2) INFORM
- (3) MOTHER
- (4) RIGHTS
- (5) TAILOR
- (6) GARDEN

Column II

- (A) uklbjz
- (B) cbxkqy
- (C) ygzwxc
- (D) bjucgw
- (E) wcpybv
- (F) vzcjlk

7. What is the code for the letter N ?

- (A) u
- (B) k

- (C) c
- (D) g

8. What is the code for the letter O ?

- (A) y
- (B) k

- (C) v
- (D) c

9. What is the code for the letter G ?

- (A) l
- (B) p

- (C) b
- (D) j

10. What is the code for the letter M ?

- (A) g
- (B) y

- (C) v
- (D) j

SECTION 02 SCIENCE

11. What happens when a sound wave passes from a highly polluted region to a pollution-free area?

- a. Amplitude remains unchanged
- b. Velocity remains unchanged
- c. Frequency remains unchanged
- d. Wavelength remains unchanged

12. What will happen if a saturated salt water solution is heated and allowed to cool without adding any more salt?

- a. Some salt will appear to settle at the bottom
- b. Some more salt can be dissolved now
- c. No change takes place
- d. Both a and b

13. Choose the correct option and complete the following sentence:

- a. metallic character
- b. chemical properties
- c. atomic sizes
- d. All of the above

Two elements X and Y having the same number of valence electrons in their atom will have similar_____.

14. Choose the correct option and complete the following sentence:

As the principal quantum number increases, the difference of distance of separation between consecutive energy levels_____.

- a. decreases
- b. remains the same
- c. increases
- d. sometimes increases and sometimes decreases

15. An ionic compound is a poor conductor of electricity. Which of the following is the reason for this?

- a. Ions do not conduct electricity.
- b. Charge on the ions is uniformly distributed.
- c. Ions occupy fixed positions in solids.
- d. Ions have a uniform field.

16. A ball of mass 2 kg is thrown up vertically with a kinetic energy of 490 J. The height at which the kinetic energy of the body becomes half of the original value is_____. The acceleration due to gravity is 9.8 ms^{-2} .

- a. 50 m
- b. 25 m
- c. 12.5 m
- d. 10 m

17. Fill in the blanks:

Suppose gravity of the Earth suddenly becomes zero, then what will happen to the motion of the Moon (neglecting the effect of other celestial body)_____.

- a. Moon will stop moving
- b. Moon will start moving with non-uniform acceleration on the same path
- c. the Moon will begin to move in a straight line in the direction in which it was moving at that instant
- d. None of the above

18. Which of the following statement is wrong?

- a. Changes in air temperature have no effect on the speed of sound.
- b. Changes in air pressure have no effect on the speed of sound.
- c. The speed of sound in water is higher than in air.
- d. The speed of light in water is lesser than in air.

19. Which of the following statements is/are correct?

- a. The nature of matrix differs according to the function of the tissue.
- b. Fats are stored below the skin and in between the internal organs.
- c. Epithelial tissues have almost no intercellular spaces between them.
- d. All of the above

20. Identify the disease-causing agents:

- a. Cholesterol, saturated fat and helminths
- b. Measles, mumps and chickenpox
- c. Viruses, bacteria and fungi
- d. Both a and c

21. A compound 'X' is an ionic compound. Which of the following is not the characteristic feature of X?

- a. X is soluble in water.
- b. X is a good electrical conductor in solid-state.
- c. X melts at high temperature.
- d. X is formed by transfer of electron(s).

22. In the following question, an assertion and the reason are given. Choose the correct option:

Assertion: Coal is a combustible organic fuel.

Reason: It occurs inside the volcanoes.

- a. Both assertion and reason are true and reason is the correct explanation of assertion.
- b. Both assertion and reason are true but the reason is not the correct explanation of assertion.
- c. Assertion is true but reason is false.
- d. Assertion is false but reason is true.

23. Which of the following is not a consequence of desertification?

- a. Decrease in the water-holding capacity of soil.
- b. Increased chances of floods.
- c. Increase in the temperature of the earth.
- d. Decrease in the concentration of carbon dioxide in atmosphere.

24. Consider the following statements and choose the correct option:

Statement 1: Mixed cropping is growing two or more crops simultaneously on the same piece of land, for example, wheat + gram, or wheat + mustard, or groundnut + sunflower.

Statement 2: Intercropping involves growing two or more crops simultaneously on the same field in a definite proportion or pattern. A few rows of one crop alternate with a few rows of a second crop, for example, soybean + maize.

- a. Both the statements are correct.
- b. Both the statements are incorrect.
- c. Statement 1 is incorrect but statement 2 is correct.
- d. Statement 1 is correct but statement 2 is incorrect.

25. All samples of carbon dioxide contain carbon and oxygen in the mass ratio 3 : 8. Which of the following laws is in agreement with the above statement?

- a. Law of conservation of mass
- b. Law of constant proportions
- c. Law of constant proportions
- d. Law of gaseous volumes

26. Sam applied breaks to his motorcycle which produced retardation of 6 m/s^2 . The motorcycle took 2 seconds to stop after applying the break. Calculate the distance it covers during this time:

- a. 6 m
- b. 8 m
- c. 10 m
- d. 12 m

27. A ball falling from rest describes distance d_1 , d_2 , and d_3 in the first, second and third seconds of its fall. Then the ratio of $d_1 : d_2 : d_3$ is:

- a. 1 : 1 : 1
- b. 1 : 3 : 5
- c. 1 : 2 : 3
- d. 1 : 4 : 9

28. A body of mass 90 g is thrown upwards. It rises to a maximum height of 50 m. At what height its kinetic energy will be reduced to 70%?

- a. 15 m
- b. 30 m
- c. 60 m
- d. 70 m

29. Consider the following statements and choose the correct option:

Statement 1: The milk is an example of a colloidal solution.

Statement 2: Medicines are more effective if they are used in the colloidal state.

- a. Statement 1 is correct and statement 2 is incorrect
- b. Statement 1 is incorrect and statement 2 is correct
- c. Both the statements are correct
- d. Both the statements are incorrect

30. Fill in the blank:

During a planned manoeuvre in a space flight, a free-floating astronaut A pushes another free-floating astronaut B, the mass of A being greater than that of B. Then, the magnitude of the force exerted by astronaut A on astronaut B is_____.

- a. equal to zero
- b. equal to the force exerted by astronaut B on astronaut A
- c. greater than the force exerted by astronaut B on astronaut A
- d. less than the force exerted by astronaut B on astronaut A

31. Which of the following options is correct regarding the given statement?

A rubber ball and a lead ball having the same mass, strike normally on a smooth vertical wall with the same velocity. The lead balls fall down after striking the wall but the rubber ball bounces back.

- a. The momentum of the rubber ball is greater than that of the lead ball.
- b. The momentum of the lead ball is greater than that of the rubber ball.
- c. The rubber ball suffers a greater change in momentum as compared to the lead ball.
- d. Both the balls suffer an equal change in momentum.

32. A ship at rest is sending ultrasonic sound waves to detect a shoal of fish. If the time gap between the signal sent from the ship and received (reflected signal) is 0.5 s, then find the distance of the shoal of fish from the ship. (Velocity of sound in water is 1400 m/s)

- a. 300 m
- b. 350 m
- c. 400 m
- d. 450 m

33. Which of the following is the correct statement?

- a. Gravity and gravitation are same.
- b. Gravity is a particular case of gravitation.
- c. Acceleration due to gravity is a scalar quantity.
- d. Different heavenly bodies have different values for G.

34. Fill in the blank:

To prevent soil erosion, a farmer plants a hedge across a field. This method works because _____.

- a. the hedge prevents the soil from direct impact of rainwater
- b. the roots of plants prevent soil erosion
- c. the hedge absorbs minerals from the soil, which makes it most compact
- d. none of the above

35. Match the following:

List I		List II	
1.	Cell Wall	a.	Closed Ring
2.	Flagella	b.	Food Reserve
3.	DNA	c.	Protect Cell
4.	Glycogen	d.	Locomotory Structure

- a. 1 – c, 2 – d, 3 – a, 4 – b
- b. 1 – d, 2 – c, 3 – b, 4 – a
- c. 1 – c, 2 – d, 3 – a, 4 – b
- d. 1 – a, 2 – b, 3 – d, 4 – c

36. Sound travels with a different speed in different media. In what order does the velocity of sound increase in these media?

- a. Water, iron and air
- b. Iron, air and water
- c. Air, water and iron
- d. Iron, water and air

37. Rectify the given statements by replacing the underlined words and select the correct option:

- i. The viscous fluid present in the nucleus is called cytoplasm.
- ii. Vacuoles are rod shaped structures which oxidise food to provide energy.
- iii. Mitochondria contain green pigment chlorophyll and take part in photosynthesis.
- iv. Lysosomes take part in synthesis of proteins.

- a. i-nucleoplasm, ii-Lysosomes, iii-Plastids, iv-Centrosomes
- b. i-protoplasm, ii-Ribosomes, iii-Centrosomes, iv-Golgi bodies
- c. i-nucleoplasm, ii-Mitochondria, iii-Chloroplasts, iv-Ribosomes
- d. i-protoplasm, ii-Plastids, iii-Chloroplasts, iv-Ribosomes

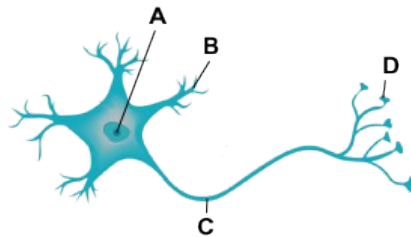
38. Harry made the following comments about cells during a class presentation. After his presentation, his teacher remarked that he made an erroneous comment. Find the same.

1. Cellulose cell walls are found in animal cells.
2. Chlorophyll is found in chloroplasts.
3. A cell is usually made up of a cell membrane, cytoplasm and nucleus.
4. Vacuoles are found mostly in plant cells.

a. i and ii only
c. i only

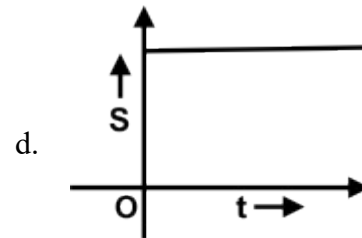
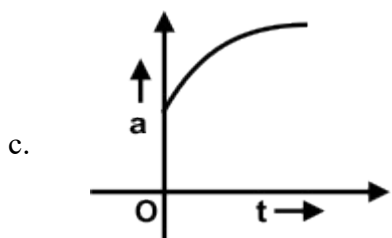
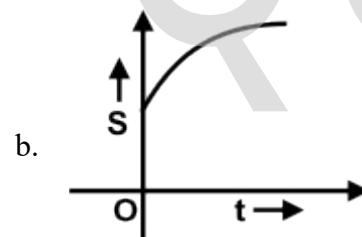
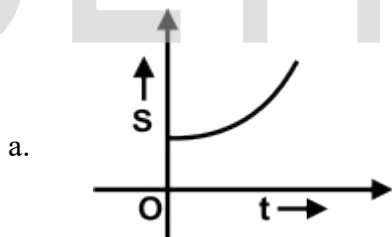
b. ii, iii only
d. All of them

39. Label A, B, C and D in the following diagram and choose the correct option:



- a. A-Cell body, B-Nucleus, C-Axon, D-Nerve ending
- b. A-Nucleus, B-Nerve ending, C-Axon, D-Dendrite
- c. A-Nucleus, B-Dendrite, C-Axon, D-Nerve ending
- d. A-Nucleus, B-Axon, C-Dendrite, D-Nerve ending

40. Which of the following graphs indicates that a body is undergoing retardation?



41. Choose the correct option and complete the following sentence:

The acceleration due to the Earth's gravity decreases, if _____.

- I. we go up from the surface of the Earth
- II. we go from the equator towards the pole
- III. the rotation speed of the Earth is increased
- IV. we go down from the surface of the Earth towards its centre



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- a. I, II and III
- c. I, II and IV

- b. I, III and IV
- d. I, II and III and IV

42. Consider the following statements and choose the correct option:

- I. Tapeworm is a hermaphrodite.
- II. Roundworm has separate sexes.
- III. Filaria is caused by a nematode.
- IV. Guinea worm is an annelid.

- a. I and II are correct
- c. III and IV are correct

- b. I, II and III are correct
- d. II, III and IV are correct

43. In the following question, an assertion and reason are given. Choose the correct option:

Assertion: Meiosis is also known as a reduction division.

Reason: Meiosis involves the formation of daughter cells with half the number of chromosomes than that of the parent cell.

- a. Both assertion and reason are true and reason is the correct explanation for the assertion
- b. Both assertion and reason are true and reason is the not the correct explanation for the assertion
- c. Assertion is true and reason is false
- d. Assertion is false and reason is true

44. Consider the following statements and choose the correct option:

Statement A: An electron in the inner orbit is more tightly bound to the nucleus.

Statement B: The greater the absolute value of the energy of an electron the more tightly the electron is bound to the nucleus.

- a. Both A and B are true and B is not the appropriate reason for A.
- b. Both A and R are individually correct and B is the correct reason for A.
- c. A is correct but B is not correct.
- d. Both A and B are not correct.

45. A ball released from the top of a tower of height M meters takes T seconds to reach the ground. What is the position of the ball in $T/3$ seconds?

- a. $M/9$ metres from the ground
- b. $7M/9$ metres from the ground
- c. $8M/9$ metres from the ground
- d. $17M/9$ metres from the ground

SECTION 03 ACHIEVER SECTION

46. Consider the following sentences and choose the correct option:

- 1. The cell wall is the site of energy production in a plant cell.
- 2. Lysosomes are the reservoirs of starch, oil and protein granules.
- 3. A plant cell becomes turgid due to plasmolysis.
- 4. Chemically plasma membrane is composed of fats and lipids.
- 5. The functional segments of DNA are called genes.

- a. Only i is correct
- c. Only v is correct

- b. Only iv is correct
- d. iii, iv and v are correct



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47. Consider the following statements and choose the correct option:

Statement 1: The atmosphere of the earth is heated by radiations which are mainly re- radiated by land and water.

Statement 2: Solar radiations heat up land slower than the water bodies.

- a. Statement 1 is correct and statement 2 is incorrect
- b. Statement 1 is incorrect and statement 2 is correct
- c. Both the statements are correct
- d. Both the statements are incorrect

48. In the following question, an assertion and the reason are given. Choose the correct option:

Assertion: It is the gravitational force exerted by the sun and the moon on the seawater that cause the formation of tides in the sea.

Reason: Gravitational force of attraction is a weak force.

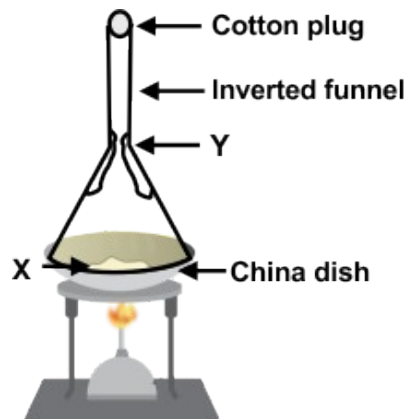
- a. Both assertion and reason are true and reason is the correct explanation of assertion.
- b. Both assertion and reason are true and reason is not the correct explanation of assertion.
- c. Assertion is true but reason is false.
- d. Assertion is false but reason is true.

49. Match the following:

List I		List II	
A.	Irregularly thickened cell wall	i.	Collenchyma
B.	Thin cell wall	ii.	Xylem parenchyma
C.	Lateral conduction of water	iii.	Parenchyma
D.	Coconut husk	iv.	Sclerenchyma

- a. A-i, B-iii, C-ii, D-iv
- b. A-i, B-ii, C-iv, D-iii
- c. A-iii, B-iv, C-ii, D-i
- d. A-iii, B-i, C-ii, D-iv

50. Identify X and Y in the given figure:





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- a. X - Mixture of naphthalene and anthracene, Y - Solid naphthalene
- b. X - Mixture of NaCl and water, Y - Solid NaCl
- c. X - Mixture of NaCl and anthracene, Y - Solid anthracene
- d. X - Mixture of sugar and NaCl, Y - Solid sugar

OLYMP QUIZ