



GG RS LEARNING HUB PVT. LTD.

NSO CLASS 10

Total Questions: 50

Time: 1hr.

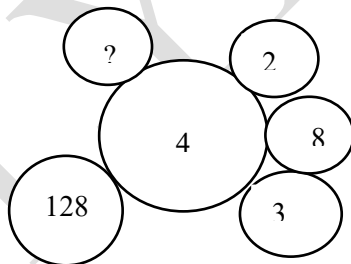
Section – 1 : Verbal and Non-Verbal Reasoning.

Section – 2 : Chemical Reactions and Equations, Acids, Bases and Salts, Metals and Non-metals, Carbon and Its Compounds, Periodic Classification of Elements, Life Processes, Control and Coordination, Reproduction in Organisms, Heredity and Evolution, Light-Reflection and Refraction, Human Eye and Colourful World, Electricity, Magnetic Effects of Electric Current, Sources of Energy, Our Environment and Its Management.

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

SECTION 01 LOGICAL REASONING

- In the given question, which pair of numbers is different from the other three.
(A) 729
(B) 1000
(C) 1331
(D) 1628
- How many pairs of letters are there in the word "SACCHARINE" which have as many letters between them in the word as in the alphabet in both directions?
(A) 2
(B) 6
(C) 4
(D) 3
- Some boys are sitting in a row. P is sitting fourteenth from the left and Q is seventh from the right. If there are four boys between P and Q , then how many boys are there in the row?
(A) 19
(B) 21
(C) 25
(D) 28
- Directions :** Find the missing number in each of the following figure



- 512
- 427
- 417
- 327

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

EF7298AG43BMDNI6QR39XS8UZLH938T54YW

- 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



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

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

Directions (7-10) : Find out which of the following conclusions logically follows.

7. Statements: Some dogs are pets, No lion is a tiger, No tiger is a dog. Conclusions:

I. All tigers are pets is a possibility

II. Some pets are not tigers

(A) Only I follows

(B) Only II follows

(C) Either I or II follows

(D) Both I and II follow

8. Statements: All books are pillows, Some fans are TVs, No TV is a book. Conclusions:

I. Some books are not fans

II. Some TVs are definitely not pillows

(A) Only I follows

(B) Only II follows

(C) Either I or II follows

(D) Neither I nor II follows

9. Statements: Some shirts are jeans, Some jeans is a pajamas, Some jeans are tees.

Conclusions:

I. All jeans being tees is a possibility.

II. At least some pajamas are jeans.

(A) Only I follows

(B) Only II follows

(C) Either I or II follows

(D) Both I and II follow

10. Statements: No drinks are burgers. Some fries are drinks, Some toffees are burgers.

Conclusions:

I. All fries being burgers is a possibility.

II. Some toffees are fries.

(A) Only I follows

(B) Only II follows

(C) Either I or II follows

(D) Neither I nor II follows

SECTION 02 SCIENCE

11. When a person walking in bright sunlight enters a dark room, he is not able to see clearly for a little while.

Identify the correct reason for the above statement:

- a. It is because the eye muscles cannot immediately adjust the focal length of the eye lens.
- b. It is because the retina retains the bright image for some time and becomes momentarily insensitive.
- c. It is because the iris is unable to contract the pupil immediately.
- d. It is because the iris is unable to dilate the pupil immediately.



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12. Which of the statements given below are correct?

- I. Ohm's law is not applicable at very low and very high temperatures.
- II. Ohm's law is applicable to the semiconductor.
- III. Ohm's law is not applicable to electron tubes, discharge tubes and electrolytes.
- IV. If a 24-volt battery is connected to a 6-ohm resistor, the current passing through the resistor is 4 A.

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

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

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

An electric motor consists of _____.

- I. rectangular coil of insulated copper wire
- II. two poles of a magnetic field
- III. split rings
- IV. conducting brushes

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

- b. I, II and III
- d. None of these

14. Which of the following equations is not an example of displacement reaction?

- a. $2Al + Fe_2O_3 \rightarrow Al_2O_3 + 2Fe$
- b. $Ca + Cl_2 \rightarrow CaCl_2$
- c. $2Kl + Cl_2 \rightarrow 2KCl + I_2$
- d. $2Na + 2H_2O \rightarrow 2NaOH + H_2$

15. Fill in the blank:

Neutral water with pH of about 7 becomes slightly acidic when aerated. This is because _____.

- a. oxygen from the air is dissolved in the water which makes the water acidic
- b. dirt, which gets contaminated with the water during aeration makes the water acidic
- c. ultraviolet radiation dissociates water molecules and makes water acidic
- d. it absorbs carbon dioxide from air

16. Which one of the following elements is alloyed with iron to produce steel which can resist high temperatures and also have high hardness and abrasion resistance?

- a. Aluminium
- c. Nickel
- b. Chromium
- d. Tungsten

17. Which of the following equations is the summary of photosynthesis?

- a. $6CO_2 + 12H_2O \rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$
- b. $6CO_2 + H_2O + \text{Sunlight} \rightarrow C_6H_{12}O_6 + O_2 + 6H_2O$
- c. $6CO_2 + 12H_2O + \text{Chlorophyll} + \text{Sunlight} \rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$
- d. $6CO_2 + 12H_2O + \text{Chlorophyll} \rightarrow C_6H_{12}O_6 + 6CO_2 + 6H_2O$



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- 18.** In the following question, an assertion and a reason are given. Choose the correct option:
Assertion (A): A person, who has suffered from smallpox can be recommended for providing nursing care to the victims of smallpox than the person who hadn't suffered from smallpox.
Reason (R): The immune system of the person who had suffered from smallpox remembers the microbes causing smallpox and responds vigorously on the next encounter.
- Both A and R are true and R is the correct explanation of A
 - Both A and R are true, but R is not the correct explanation of A
 - A is true, but R is false
 - Both A and R are false
- 19.** The formation of the ozone hole in the Antarctic region has been a cause of concern. What could be the reason for the formation of this hole?
- Presence of prominent tropospheric turbulence and inflow of chlorofluorocarbons.
 - Absence of polar front and stratospheric clouds and inflow of methane and chlorofluorocarbons.
 - Presence of prominent polar front and stratospheric clouds and inflow of chlorofluorocarbons.
 - The increased temperature at the polar region due to global warming.
- 20.** Arrange the following in the increasing order of ease of oxidation:
(A) SO_4^{-2} (B) F^{-1} (C) Br^{-1} (D) OH^{-}
- A B D C
 - B C D A
 - C D B A
 - A B C D
- 21.** Identify the reaction which takes place at the anode when an aqueous solution of CuSO_4 is electrolysed using platinum as anode:
- Hydroxyl ions get reduced to hydrogen.
 - Hydroxyl ions get oxidised to oxygen.
 - Copper metal gets oxidised.
 - Copper ions gets reduced.
- 22.** Olivia measured the focal length of a convex lens by focusing a parallel beam of yellow, violet and green colours at the principal axis. If f_y , f_v and f_g are the respective focal lengths, then which among the following is the correct relation?
- $f_v = f_y = f_g$
 - $f_v < f_g < f_y$
 - $f_v > f_y > f_g$
 - $f_v > f_g > f_y$
- 23.** Which of the following statements is correct regarding the grafting process?
- The rooted plant that is cut in a slanting manner is known as a scion.
 - The part of a stem that is cut in a slanting way is called stock.
 - This is a natural method of vegetative reproduction.
 - Grafting is practised for mango and citrus plants.



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- 30.** Which of the following is obtained in its pure form by the reaction of sugar and sulphuric acid?
- a. Water
b. Carbon
c. Oxygen
d. Hydrogen
- 31.** Choose the correct option and complete the following sentence:
Sexual reproduction causes genetic variation because of _____.
1. blending of genes
2. chromosomal changes
3. shuffling of genes
- a. Only 1
b. Only 2
c. Only 3
d. All of the above
- 32.** Why shouldn't we light a candle in a closed room with people?
- a. The CO₂ formed causes breathlessness.
b. Carbon particles are formed which are dangerous for the respiratory tract.
c. Methane gas, which is poisonous, is formed.
d. Carbon monoxide gas which reduces the ability of blood to carry oxygen is formed.
- 33.** If I₁ is the first ionization potential, I₂ is the second ionization potential, I₃ is the third ionization potential and I₄ is the fourth ionization potential of an element, then which of the following has the least value?
- a. I₁
b. I₂
c. I₃
d. I₄
- 34.** Identify the correct sequence of fractions obtained when petroleum is subjected to fractional distillation:
1. Lubricating oil
2. Petrol
3. Petroleum ether
4. Diesel oil
- a. 2, 3, 4, 1
b. 3, 2, 4, 1
c. 3, 2, 1, 4
d. 2, 4, 3, 1
- 35.** What happens when 1 mole of ethyne undergoes complete combustion?
- a. 2 moles of carbon monoxide and half-mole of water are formed
b. 4 mole of carbon dioxide and 1 mole of water are formed
c. 2 mole of carbon dioxide and 1 mole of water are formed
d. 2 moles of carbon dioxide and 2 moles of water are formed
- 36.** When SO₂ is passed through a solution of K₂Cr₂O₇ turns green. Which of the following correctly shows the change in the oxidation state of chromium and sulphur?
- a. +3 to +6 and +4 to +2 respectively
b. +6 to +3 and +4 to +6 respectively
c. +4 to +6 and +4 to -2 respectively
d. No change in 0 states



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42. Fill in the blank:

When a ray of light falls on a transparent glass plate, a part of it is reflected and a part is refracted. The reflected and refracted rays can be perpendicular to each other for _____.

- a. angle of incidence equal to 90°
- b. angle of incidence equal to zero
- c. only one angle of incidence
- d. more than one angle of incidence

43. Match Column I (Vegetative propagation type) with Column II (Example):

| Column I (Vegetative propagation type) | | Column II (Example) | |
|--|--------------------------------|---------------------|-------------|
| 1. | Tuber eye | a. | Garlic |
| 2. | Bulb | b. | Rose |
| 3. | Cutting | c. | Potato |
| 4. | Plantlets at margins of leaves | d. | Bryophyllum |

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

44. Match the entries of Column I with those of Column II:

| | Column I | | Column II |
|----|----------------|----|-----------------------|
| 1. | Stomata | a. | Anaerobic respiration |
| 2. | Mangrove trees | b. | Intake of CO_2 |
| 3. | Wood stem | c. | Pneumatophores |
| 4. | Yeast | d. | Lenticels |

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

45. Which of the following would stop evolution by natural selection from occurring?

- a. If humans became extinct because of an epidemic disease.
- b. If a thermonuclear war killed most living organisms and changed the environment drastically.
- c. If ozone depletion led to increased ultraviolet radiation, which may cause many new mutations.
- d. If all individuals in a population were genetically identical, and there was no genetic recombination, sexual reproduction, or mutation.



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SECTION 03 ACHIEVER SECTION

46. In the following question, an assertion and the reason are given. Choose the correct option:
Assertion (A): In the periodic table of chemical elements, electron affinity is always found to increase from top to bottom in a group.
Reason (R): In a group, the atomic radii generally increase from top to bottom.
- Both A and R are true and R is the correct explanation of A
 - Both A and R are true, but R is not the correct explanation of A
 - A is true, but R is false
 - A is false, but R is true
47. In the following question, an assertion and a reason are given. Choose the correct option:
Assertion (A): Generally, the colour of indicators changes in a particular pH range. **Reason (R):** Indicators are weak acids or weak bases and exhibit different colours in molecular form and ionic form.
- Both A and R are true and R is the correct explanation of A
 - Both A and R are true, but R is not the correct explanation of A
 - A is true and R is false
 - A is false and R is true
48. An air bubble in a glass slab ($\mu = 3/2$) is 6 cm deep when viewed from one face and 3 cm deep when viewed from the opposite face. Determine the thickness of the slab:
- 9 cm
 - 13.5 cm
 - 15 cm
 - 18 cm
49. Fill in the blank:
When $\text{Ca}(\text{NO}_3)_2$ is heated, it gives CaO , $\text{NO}_2(\text{g})$ and $\text{O}_2(\text{g})$. The correct number of moles of $\text{Ca}(\text{NO}_3)_2$, CaO , $\text{NO}_2(\text{g})$ and $\text{O}_2(\text{g})$ are present in the reaction are respectively _____.
- 2, 1, 3, 2
 - 2, 2, 4, 1
 - 2, 2, 2, 1
 - 1, 2, 4, 1
50. A convex mirror of focal length f produces an image $1/n^{\text{th}}$ of the size of the object. Calculate the distance of the object from the mirror:
- $(n + 1)/n f$
 - $(n + 1)f$
 - $(n - 1)f$
 - $(n - 1/n)f$