



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2017-18)

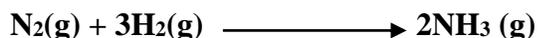
Class:- XI
Time- 3 Hrs.

Subject:- Chemistry
F. M:- 70

General Instructions:-

- All questions are compulsory.
- Question no. 1 to 5 are very short answer questions and carry 1 mark each.
- Question no. 6-10 are short answer questions and carry 2 marks each.
- Question no. 11 to 22 are also short answer questions and carry 3 marks each.
- Question no.- 23 is a value based question and carry 4 marks.
- Question no. 24 to 26 are long answer questions and carry 5 marks each.

1. Which law correlates the mass and volume of the gas? [1]
2. Which ion have similar spectrum as that of H-atom. [1]
3. How are 0.50 mol Na₂CO₃ and 0.50 M Na₂CO₃ different? [1]
4. Write the general electronic configuration of f-block elements. [1]
5. Draw the Lewis structure of CO₃²⁻. [1]
6. Explain why BeH₂ molecule has zero dipole moment although Be-H bonds are polar. [2]
7. Write the electronic configuration of Fe²⁺. How many unpaired electrons are present in Fe²⁺. [2]
8. The mass of 3.01×10^{23} molecules of a triatomic gas (A₃) is 12 g. Calculate the number of atoms in 8g of the gas. [2]
9. With the help of VSEPR theory explain the arrangement of electron pair and shape of SF₄. [2]
10. Dinitrogen and dihydrogen reacts with each other to produce ammonia according to the following chemical equation



Calculate the mass of ammonia produced if 2.00×10^3 g dinitrogen reacts with 1.00×10^3 g of dihydrogen. [2]

OR

Calculate the mole fraction of ethylene glycol (C₂H₆O₂) in a solution containing 20% of C₂H₆O₂ by mass.

11. Tin forms two oxides. The % of tin in the two oxides is 78.77 and 88.12. Show that these data confirms the law of multiple proportions. [3]
12. (a) Define threshold frequency.
(b) Calculate the wave number for the longest wavelength transition in the Balmer Series of atomic hydrogen. [3]
13. (a) Write the nomenclature and symbol for the element with atomic number 107.
(b) How do you justify the presence of 18 electrons in 5th period of the periodic table? [3]

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14. An aqueous solution of HCl is 38% by mass and its density is 1.19 g/ml. Calculate the molality and molarity of the solution. (HCl = 36.5) [3]
15. Distinguish between electron gain enthalpy and electro negativity. [3]
16. Find the hybridization and draw the shape of the following molecules. [3]
 (a) ClF_3 (b) SF_6 (c) XeF_4
17. The work function for caesium atom is 1.9eV. Calculate (a) the threshold wavelength of the radiation. If the caesium element is irradiated with a wavelength 500 nm. Calculate the kinetic energy and the velocity of the ejected photoelectron. [3]
18. Define Resonance hybrid and draw the resonating structure of O_3 molecule and NO_3^- ion. [3]
19. In each of the following pairs which species has larger size and why? [3]
 (a) O^{2-} or F^- (b) P or AS (c) Na^+ or Mg^{2+}
20. (a) Define mole fraction. [3]
 (b) What are the two limitations of law of constant proportion?
21. (a) What are degenerate Orbitals? [3]
 (b) Find the radial and angular nodes in 2p and 4f orbitals.
22. (a) Why uncertainty principle is not applicable to macroscopic particles? [3]
 (b) Define electromagnetic spectrum with the help of an example.

OR

Explain the following:

- (a) Pauli's exclusion principle
- (b) Hund's Rule of maximum multiplicity
- (c) Aufbau's Principle
23. Reena loved to learn from experiment. When she read about the solubility of different compounds in water, she decided to prove it. She took some chemical compounds from her teacher in the laboratory and try to dissolve them. These compounds were magnesium chloride, lime, ethanol, ethyl amine. But she got confused because she found all of these are soluble in water. She discussed these results with her teacher who clarify her reason for this. [4]
 (i) Why did Reena think that only certain compounds are soluble in water but others are not?
 (ii) What explanation was given by the teachers? Explain.
 (iii) What values are associated with Reena and her teacher?
24. (a) Show the formation of σ and π bonds in ethyne. [5]
 (b) Which one out of N_2 and H_2O is polar and why?
 (c) Dipole moment of $\text{NH}_3 > \text{NF}_3$, why?

OR

- (a) Explain the formation of H₂ molecules on the basis of valence bond theory.
- (b) Calculate the formal charge on carbon in CO₃²⁻ ion.
- (c) Find the total number of sigma and Pi bonds in benzene?

25. (a) What are representative elements.
- (b) Out of N and O which atom has greater ionization enthalpy and why?
- (c) Among the following pairs of orbitals which one will experience large effective nuclear charge and why? a) 3d and 3p. [5]

OR

- (a) Define covalent and Vander waals radius.
- (b) Explain the following:-
 - (i) Noble gases have large electron gain enthalpies.
 - (ii) The electron gain enthalpy of Oxygen is less negative than that of Sulphur.

26. (a) Define Lewis de Broglie equation and derive an expression for it.
- (b) Explain quantum numbers. [5]

OR

- (a) Explain why half filled and full filled orbitals are extra stable?
- (b) Differentiate between emission and absorption spectra.



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HALF YEARLY EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Business Studies
F. M: - 90

General Instructions:-

- All questions are compulsory.
- Answers to Question carrying 1 marks may be one word to one sentence.
- Answers to Question carrying 3 marks may be from 50 to 75 words.
- Answers to Question carrying 4-5 marks may be of about 150 words.
- Answers to Question carrying 6 marks may be of about 200 words.

1. Name two systems which govern membership in Joint Hindu Undivided Family business. [1]
2. What is meant by disinvestment? [1]
3. What is Multiple Option Deposit Account? [1]
4. Why is business considered as an economic activity? [1]
5. Where national security is concerned which form of public enterprise is most suitable? [1]
6. Principle of Indemnity is not applicable to which insurance? [1]
7. Mention two causes of speculative risks. [1]
8. A public company with share capital is required to file a document with the Registrar of Companies in case it does not want to make public issue, through prospectus. Name this document. [1]
9. Give two examples of Statutory Corporation. [1]
10. Define Fire Insurance. [1]
11. Name the partner who shares profits only. [1]
12. How does Trade remove hindrance of persons? [1]
13. What is meant by auxiliaries to trade? [1]
14. Mention any three benefits of e-banking, provided to customers. [3]
15. Write short notes on:
(a) Regional balance (b) Economies of scale [1½x2=3]
16. Explain Public Private Partnership, with suitable examples. [3]
17. Differentiate between Memorandum of Association and Articles of Association on the following basis. [4]
(a) Objectives (b) Position (c) Necessity (d) Alteration
18. Mention and explain government policy towards public sector since 1991. [4]
19. Explain :- (a) RTGS (b) NEFT [2x2=4]
20. What is the role of profit in a business, mention any four points in support of your answer. [4]
21. Mention the details of documents required before the issue of Certificate of Commencement of Business. [4]

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22. Name the following :- [1½x8=4]
- (a) A document containing terms and conditions of partnership deal.
 - (b) The form of organisation best suited for self-employment.
 - (c) The organisation where members associate together on the principle of mutual help and common interest.
 - (d) A partnership set-up for a specific project .
 - (e) A person who lends his name and goodwill for the benefit of partnership firm.
 - (f) A person who contributes capital but does not take part in the business of the firm.
 - (g) A person who contributes, capital, participates in the business but whose identify is not disclosed to outsiders.
 - (h) A person who gives an impression to others that he / she is a partner of the firm.
23. What is business risk and, mention and explain the nature of business risks. [5]
24. Tania and Suraj are qualified Chartered Accountant and lawyer respectively. They joined hands to form a consultancy firm. They entered into a written agreement which specifies terms and condition that will govern their firm. They also got the firm registered. Both of them played their part in carrying the business activities. Their professional attitude helped them in gaining success within a limited time.
- Answer the following questions based on the above paragraph.
- (a) Who governs / regulates lawyers in India?
 - (b) Which form of business organisation is referred to in the above case.
 - (c) What is the written agreement between Tania and Suraj known as? List any two conditions of it.
 - (d) Give any two consequences of non-registration of a firm. [1+1+1+2=5]
25. “Global Corporations are giant in terms of assets and operations”. Explain this statements. [5]
26. Mention and explain any five principles of Insurance. [5]
27. Explain briefly any three merits and demerits each of a Statutory Corporation. [6]
28. Briefly explain the functions of a promoter. [6]
29. An entrepreneur is supposed to be socially responsible by fulfilling his responsibilities towards investors , consumers, employee, society and government. But Inder, an entrepreneur instructs his employees to concentrate on maximisation of profits and losses about social responsibilities. As a result, the customers are getting exploited , environment is being degraded and the government is being cheated by under-assessing of excise duty, VAT and income tax by falsifying sales records.
- Based on the above paragraph , answer the following questions:-
- (a) State the objective being ignored by the entrepreneur.
 - (b) Do you justify such behavior of the entrepreneur? Give reasons in support of your answers.
 - (c) What values are being ignored by the entrepreneur? [2+2+2=6]
30. List and explain any six telecom services available. [6]