

Dhaka Board 2017

Chemistry

Subject Code 137

Time—2 hours 35 minutes

Creative Essay Type Questions

Full marks—50

[N.B. -The figures in the right margin indicate full marks. Read the stems attentively and answer any five of the following questions.]

1. ★

Period	Gr I	2	—	14	17
2	Li	—	—	C	—
3	X	Y	—	—	Cl
4	Z	—	—	—	—

[Here x, y, z are used as symbol, they are not the symbol of any regular elements.]

- What is "Stoichiometry"? 1
- Explain NH_3 is basic in nature. 2
- Explain the order of atomic size of Gr-I and period-3 elements of the stem. 3
- Compound of Y and Cl and compound of C and Cl, which one conduct electricity and why explain? 4

2. ► Being separated CaCO_3 by heat "B" and "C" gas (mass-44) are produced. Compound "D" is got by adding water with "B" and "E" a compound can be found by throwing Cl_2 gas within "D".

- What is saponification? 1
- Define the role of baking powder to indigation. 2
- "C" is an acidic gas— Explain. 3

d. Compound "E" is an effective germ killer — Explain it. 4

3. ► "X" and "Y" two atoms whose atomic number are 20 and 17 :—

a. What is radical? 1

b. Explain valency and valence electron. 2

c. Explain with diagram formation of "Y₂" molecule. 3

d. Is the compound formed by "X" and "Y" is soluble in water?— Explain with logic. 4

4. ► To prepare 40.5g Ca (HCO₃)₂ mixed 25g CaCO₃, 4.5g H₂O and 8g CO₂. But does not get expected product.

a. What is the value of bond energy of O—H? 1

b. What is meant by galvanizing? 2

c. How much 'mole' CO₂ used in the reaction? 3

d. Explain the cause of getting less product in the reaction. 4

5. ★ (i) $\text{Mg}(\text{OH})_2 + 2\text{HCl} \longrightarrow \text{MgCl}_2 + 2\text{H}_2\text{O}$

(ii) $\text{CaO} + \text{CO}_2 \longrightarrow \text{CaCO}_3$

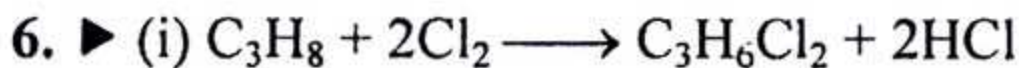
(iii) $\text{Ca} + \text{F}_2 \longrightarrow \text{CaF}_2$

a. What is oxidation number? 1

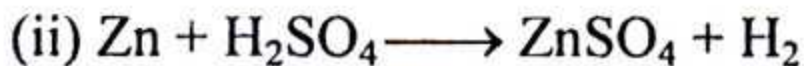
b. Why concentrated HNO₃ kept in brown colored bottle? Explain. 2

c. Explain the role of like (i) reaction in our daily life. 3

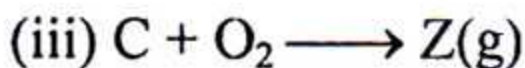
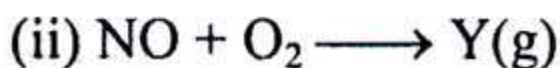
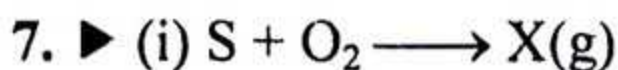
d. All synthesis reactions are addition but all addition reactions are not synthesis — Analyze depend on (ii) and (iii) no. 4



[Bond energy of C–H, Cl – Cl, C – Cl and H – Cl are 414 KJ/mole, 244KJ/mole, 326KJ/mole and 431KJ/mole.]



- What is the atomic number of Arsenic? 1
- How vinegar preserve food? 2
- Calculate the value of ΔH of reaction (i) of the stem. 3
- Explain with logic that reaction (ii) is an oxidation reduction reaction. 4



- What is pH? 1
- Why Benzene is called aromatic hydrocarbon? Explain. 2
- Calculate the number of bond pair and lone pair electrons in molecule X and Z. 3
- Analyze the effect of X, Y and Z gas on environment. 4



- What is gasohol? 1
- What do you mean by polymer? 2
- How can you prepare polymer and glycol from compound (i)? Explain with reaction. 3
- Is there any importance in industry compound (ii) and (iii)? Analyze with logics. 4

Time — 25 minutes

Creative Multiple Choice Questions

[NB. Answer all the questions. Each question carries one mark. Block fully, with a ball point pen, the circle of the letter that stands for the correct/best answer in the "Answer Sheet" for the Multiple Choice Questions Examination.]

1. What is the standard pH value for skin of human body?

- (a) 5.0 (b) 5.5
(c) 7.0 (d) 7.8

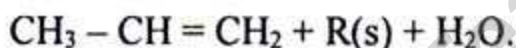
2. Which one diffuse more?

- (a) He (b) H₂
(c) CO₂ (d) NH₃

3. ★ Which one is the last step of investigation and research method?

- (a) Taking advance idea about result
(b) Effect on science and welfare of human being
(c) Gaining knowledge about the subject
(d) Consisting and analyze about the information

Follow the stem and answer questions no. 4 and 5 :-



4. What is R?

- (a) Alcohol (b) Acid
(c) Base (d) Salt

5. Alkene of the stem—

- i. catalytic hydrozination is possible
ii. Potassium permanganet is obtain by oxidation
iii. polymerisation is possible

Which one is correct?

- (a) ii (b) i and iii
(c) ii and iii (d) i, ii and iii

6. With how many elements Lavosieya

made periodic table?

- (a) 33 (b) 63
(c) 67 (d) 92

7. ★ Which gas is volatile at solid state?

- (a) CO (b) CO₂
(c) NO₂ (d) NH₃

8. Which one is the ore of lead?

- (a) Limonite
(b) Hematite
(c) Megnatite
(d) Galena

9. How many molecules of water are there in blue vitriol?

- (a) 1 (b) 3
(c) 5 (d) 7

10. Which one is known as bio fuel?

- (a) CH₄ (b) CH₃OH
(c) CH₃CH₂OH (d) CH₃COOH

11. What is the symbol of potassium?

- (a) P (b) Po
(c) K (d) Ka

12. How many amino acid are present in insuline polymer?

- (a) 20 (b) 21
(c) 22 (d) 23

13. In which oxidation is possible?

- (a) Fe²⁺ (b) Cu²⁺
(c) Fe³⁺ (d) Na⁺

14. ★ What is the concentration of 10.6gm, 100mL soda ash solution?

- (a) 0.10M (b) 0.37M
(c) 1.00M (d) 2.65M

15. Monomer of PVC is—

- polypropene
- vinyl chloride
- monochloro ethene

Which one is correct?

- (a) i and ii (b) i and iii
(c) ii and iii (d) i, ii and iii

16. Which one is used in treatment of blood Leukemia?

- (a) ^{238}Pu (b) ^{131}I
(c) ^{106}Ru (d) ^{32}P

Follow the stem and answer questions no., 17 and 18 :-

Element	Period	Group
P	2	2
Q	3	17
R	4	2

[Here P, Q, R are the symbolic terms]

17. In which solvent dissolve the compound formed by R and Q?

- Alcohol
- Water
- Kerosene
- Carbon tetrachloride

18. In case of the order of P, Q and R element—

- Electro negativity : $Q > R$
- Atomic size : $R > Q > P$
- Ionization potential : $R > P$

Which one is correct?

- (a) i and ii (b) i and iii
(c) ii and iii (d) i, ii and iii

19. In which Copper slag is dissolved?

- In water
- In cytric acid
- In alcohol
- In carbon tetrachloride

20. Which elements are there in industrial grade CaC_2 ?

- As, N
- N, P
- As, S
- As, P

21. How many lone pair of electrons are there in PCl_3 ?

- 0
- 1
- 3
- 10

22. $_{14}\text{R}$ is an element—

- oxide of the above element has high boiling and melting point
- group number is four in the periodic table
- it form ionic bond with bromine

Which one is correct?

- i
- ii
- i and iii
- i, ii and iii

23. What will be the colour if wet blue litmus paper pass through SO_3 gas?

- Green
- Red
- Colourless
- Orange

24. Which one is an electronic conductor?

- Graphite
- Alkali solution
- Acid solution
- Salt solution

25. What is the oxidation number of Sulphur in potassium sulphide?

- 2
- 0
- +4
- +6

Ans.

1	(b)	2	(b)	3	(b)	4	(d)	5	(b)	6	(a)	7	(b)	8	(d)	9	(c)	10	(c)	11	(c)	12	(c)	13	(a)
14	(c)	15	(c)	16	(d)	17	(b)	18	(a)	19	(b)	20	(d)	21	(b)	22	(a)	23	(b)	24	(a)	25	(a)		