



# CHEMISTRY

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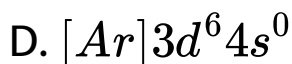
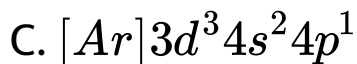
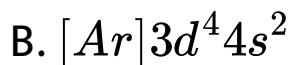
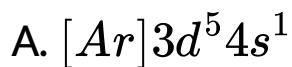
JHARKHAND

MODEL SOLVED PAPER 2016

## Section B Chemistry

1. The ground state electronic configuration of

${}_{24}\text{Cr}$  is



**Answer: A**



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2. In a thermite process, the reduction of metallic oxides is done by

A. Al

B. Na

C.  $H_2$

D. CO

**Answer: A**



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**3.** Covering of iron sheets with a layer of zinc is called

A. zinc plating

B. galvanising

C. tinning

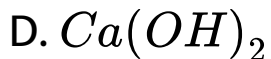
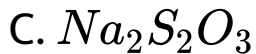
D. electroplating

**Answer: B**



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4. The solubility of which among the following substances, decrease with rise in temperature?



**Answer: D**



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5. The enzyme pepsin converts

A. proteins to amino acids

B. fats to fatty acids

C. glucose to ethyl alcohol

D. starch to glucose

**Answer: A**



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6. Equal volumes of two solutions with  $\text{pH}=4$  and  $\text{pH} = 10$  are mixed. The  $\text{pH}$  of resulting solution will be

A. 3.5

B. 6.1

C. 7

D. 14

**Answer: C**



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7. The element with atomic number 50 is a member of

A. s-block

B. p-block

C. d-block

D. f-block

**Answer: B**



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**8.** In a period of the periodic table as we move from left to right usually



A. atomic radius decreases

B. Ionisation potential increases

C. electron affinity decreases

D. electronegativity increases

Among the above statements, which one is false?

**Answer: C**



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9. Which of the following acts as a catalyst in the hydrogenation of alkenes?

A.  $Ni$

B.  $Mn$

C.  $MnO_2$

D.  $V_2O_5$

**Answer: A**



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10.  ${}_{92}^{235}\text{U}$ ,  ${}_{92}^{238}\text{U}$  and  ${}_{92}^{239}\text{U}$  are

A. isomers

B. isotopes

C. isobars

D. Isotones

**Answer: B**



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11. The disaccharide present in milk is

A. amylose

B. lactose

C. sucrose

D. glucose

**Answer: B**



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**12.** Which of the following are isoelectronic?



A. 2 and 3

B. 3 and 4

C. 2 and 4

D. All of these

**Answer: D**



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**13.** A bivalent metal has 37.2 equivalent weight.

The molecular weight of its chloride is

A. 216.6

B. 148.8

C. 145.4

D. 172.8

**Answer: C**



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**14.** Number of atoms present in 1.8g  $H_2O$ , 1.7g  $NH_3$  and 1.6g  $CH_4$  has the following sequence



**Answer: A**



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15.  $X^+$ ,  $Y^{2+}$  and  $Z^-$  ions are isoelectronic of  $CO_2$ . The sequence in number of protons in these ions will be

A.  $X^+ = Y^{2+} = Z^-$

B.  $X^+ < Y^{2+} < Z^-$

C.  $Z^- < X^+ < Y^{2+}$

D.  $Y^{2+} < X^+ < Z^-$

**Answer: C**



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**16.** Which of the following metals produce  $H_2$  gas on reaction with cold water?



A. Hg

B. Sn

C. Al

D. Ca

**Answer: D**



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**17.** Which of the following elements has maximum electronegativity?

A. F

B. Cl

C. Br

D. I

**Answer: A**



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**18.** Depletion of ozone layer is caused by

A.  $CO_2$

B. Chloro fluorocarbons (CFCs)

C.  $CH_4$

D. Oxides of S and N

**Answer: B**



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**19.** The 'acid rain' which damages historical monuments is caused mainly by the presence of

A. CFCs (chloro fluoro carbons)

B. Oxides of S and N

C.  $CH_4$

D.  $CO_2$

**Answer: B**



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**20.** The 'global warming' is mainly due to which gas?

A.  $N_2O$

B.  $O_2$

C.  $CO$

D.  $CO_2$

**Answer: D**



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**21.** Which of the following statements are correct?

(1) Muscular contraction is a very fast process.

(ii) Reaction between  $BaCl_2$  and  $H_2SO_4$  is a fast process.

(iii) Rusting of iron is a slow process.

(iv) Rust of iron is  $Fe_2O_3 \cdot xH_2O$

A. (i), (i) and (iii)

B. (ii), (iii) and (iv)

C. (i) and (iii)

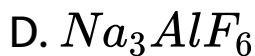
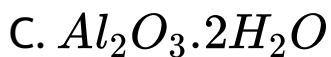
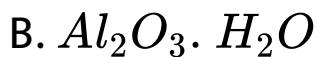
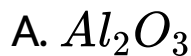
D. All of these

**Answer: D**



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22. The ore of Al, 'bauxite' is



**Answer: C**



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**23.** The main constituents of alloy 'brass' are

A. Al and Mg

B. Fe and Cr

C. Cu and Sn

D. Cu and Zn

**Answer: D**



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24. (v) An essential constituent of amalgam is :

A. Al

B. Ag

C. Hg

D. Au

**Answer: C**



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25. 'Inert pair effect' is shown by

A. Tl

B. Pb

C. Bi

D. All of these

**Answer: D**



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**26.** Which of the following is a physical change?

- A. Burning of a candle
- B. Clotting of blood
- C. Evaporation of water
- D. Digestion of food

**Answer: C**



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27. Which of the following subshells is not possible?

A. 1s

B. 1p

C. 2s

D. 2p

**Answer: B**



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28. Which of the following will liberate  $Br_2$  from KBr?

A.  $H_2$

B.  $I_2$

C.  $Cl_2$

D.  $SO_2$

**Answer: C**



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29. Fe, Mg and Co are present respectively, in

A. haemoglobin, myoglobin and chlorophyll

B. haemoglobin, chlorophyll and vitamin

$B_{12}$

C. chlorophyll, vitamin  $B_{12}$  and myoglobin

D. vitamin  $B_{12}$ , haemoglobin and  
chlorophyll

**Answer: B**



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30. The amount of electricity required to deposit one mole of Al from a solution of  $AlCl_3$  will be

- A. 3.0 Faraday
- B. 1.0 Faraday
- C. 1.33 Faraday
- D. 0.33 Faraday

**Answer: A**



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31. The modern periodic table is based on

A. mass number

B. molecular mass

C. atomic radius

D. atomic number

**Answer: D**



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32. Which of the following is a renewable source of energy?

A. Coal

B. Petroleum

C. Natural gas

D. Solar energy

**Answer: D**



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**33.** Among the following fuels, which has highest calorific value?

A. Blogas

B. Kerosene

C. Coal

D. Hydrogen gas

**Answer: D**



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34. Which of the following ores is concentrated by 'magnetic separation' process?

A.  $ZnS$

B.  $Al_2O_3 \cdot 2H_2O$

C.  $Fe_3O_4$

D.  $Fe_2O_3$

**Answer: C**



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35. Which of the following non-metals is a liquid at room temperature?

A. Hg

B.  $Cl_2$

C.  $Br_2$

D.  $I_2$

**Answer: C**



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**36.** Deficiency of which vitamin may lead to night blindness?

A. Vitamin A

B. Vitamin B

C. Vitamin E

D. Vitamin K

**Answer: A**



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37. The number of  $\sigma$  and  $\pi$  bonds in a molecule of acetylene respectively, are

A.  $3\sigma$  and  $2\pi$

B.  $2\sigma$  and  $3\pi$

C.  $5\sigma$  and  $2\pi$

D.  $5\sigma$  and  $3\pi$

**Answer: A**



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38. On reaction with water,  $Al_4C_3$  gives

A. methane

B. ethylene

C. acetylene

D. propene

**Answer: A**



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**39.** The base- sugar-phosphate unit present in the nucleic acid is called as

A. nucleoside

B. nucleotide

C. codon

D. gene

**Answer: B**



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40. Which of the following is strongest acid?

A. HOCl

B.  $HClO_2$

C.  $HClO_3$

D.  $HClO_4$

**Answer: D**



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41. Among the following metals, which does not produce  $H_2$  gas on reaction with dilute acids?

1. Zn 2. Al 3. Hg 4. Cu

A. Zn and Al

B. Zn and Hg

C. Hg and Cu

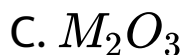
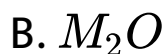
D. Hg and Al

**Answer: C**



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42. An element M having mass number 27 has 14 neutrons in its nucleus. The formula for oxide of this element will be



**Answer: C**



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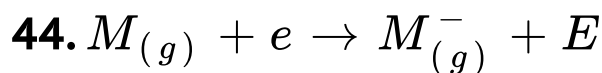
43. Which solvent is often called a 'universal solvent'?

- A. Bromine trifluoride
- B. Water
- C. Liquid ammonia
- D. Liquid sulphur dioxide

**Answer: B**



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In the above equation, E represents

- A. electron affinity
- B. electronegativity
- C. first ionisation potential
- D. second ionisation potential

**Answer: A**



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**45.** The crystal of KCl consists of

A. KCl molecules

B. K and Cl atoms

C. K and Cl ions

D. molecules, atoms and ions.

**Answer: C**



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**46.** The water soluble vitamins are

A. B and C

B. A and H

C. B and D

D. A and D

**Answer: A**



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**47.** Which of the following statements is incorrect?

- A. Cellulose is a polymer of  $\beta$ - glucose
- B. Proteins are polymers of amino acids
- C. Terylene is a polyamide polymer
- D. The monomer of Teflon polymer is tetrafluoro-ethylene

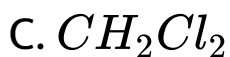
**Answer: C**



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48. Which of the following is used in fire extinguishers ?



**Answer: D**



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49. Energy of 1g Uranium is equal to

A.  $9.0 \times 10^{13} \text{ J}$

B.  $9.0 \times 10^{19} \text{ J}$

C.  $3.0 \times 10^{16} \text{ J}$

D.  $3.0 \times 10^{17} \text{ J}$

**Answer: A**



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50. The sodium nucleus  ${}_{11}^{23}\text{Na}$  contains

A. 11 electrons

B. 12 protons

C. 23 protons

D. 12 neutrons

**Answer: D**



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