

TEST IV வேதியியல்

- A. metals are good conductors of heat and electricity.
R. Metals are malleable and ductile.

 - Both A and R are true and R is correct explanation of A
 - Both A and R are true but R is not correct explanation of A
 - A is true but R is false
 - A is false but R is true
- A. Isotopes have same atomic number but different atomic masses.
R. Isotopes differ in number of protons inside their nucleus.

 - Both A and R are true and R is correct explanation of A
 - Both A and R are true but R is not correct explanation of A
 - A is true but R is false
 - A is false but R is true

- Match List I with List II

List I	List II
A. Carbohydrate	1. Pepsin
B. Enzyme	2. Starch
C. Hormone	3. Keratin
D. Protein	4. Progesterone

The correct answer code is:

	A	B	C	D
a	1	2	3	4
b	2	1	4	3
c	2	1	3	4
d	1	2	4	3

- "Aqua regia" is a mixture of

 - HCl and H_2SO_4
 - HCl and HNO_3
 - HCl and HBr
 - HCl and HF
- In order to lower the temperature below $0^\circ C$, the substance mixed with ice is

 - sodium chloride
 - sodium carbonate
 - magnesium sulphate
 - lime
- The substance that contains the maximum amount of nitrogen is

 - urea
 - ammonium sulphate
 - ammonium nitrate
 - ammonium chloride
- Bakelite is obtained from

 - phenol and formaldehyde
 - phenol and formic acid
 - ethylene and acetaldehyde
 - adipic acid and caprolactam
- The main use of 'magnesia' is as/an

 - mild laxative
 - antiseptic
 - antibiotic
 - pain killer
- Boric acid is a/an

 - mild antiseptic
 - germicide
 - strong antiseptic
 - antibiotic

10. An antipyretic is a drug that
a. decreasing the body temperature
b. increasing the body temperature
c. kills infection
d. is used in viral attacks
11. The commonly – used medicine for typhoid is
a. chlorquin
b. ascorbic acid
c. a sulpha drug
d. chloromycetin
12. In hospitals, the oxygen tubes for respiration contain oxygen and
a. nitrogen
b. helium
c. argon
d. carbon dioxide
13. Absolute alcohol is
a. 100% of pure
b. 95% alcohol and 5% water
c. 200% pure
d. purified spirit
14. A solution with pH = 2 is more acidic than a solution of pH = 6 by a factor of
a. 4
b. 12
c. 400
d. 10000
15. The bacteria responsible for 'nitrogen fixation' is found in the roots of
a. grass
b. citrus plants
c. leguminous plants
d. neem tree
16. Enzymes are made up of
a. carbohydrates
b. amino acids
c. nucleosides
d. fatty acids
17. Artificially, gasoline is prepared by an industrial process known as
a. Sabatier and Sendren's process
b. Friedel – Craft reaction
c. Fischer – Tropsch process
d. Haber's process
18. Chemical composition of Aspirin is
a. phenol
b. salicylic acid
c. acetyl salicylic acid
d. benzoic acid
19. Tetraethyl lead (TEL) is added to petrol to
a. prevent freezing
b. increase boiling point
c. increase flash point
d. increase anti – knocking rating
20. Paracetamol
a. relives body pain
b. is an antibiotic
c. is a sulpha drug
d. causes stomach ulcers
21. The pH of an aqueous solution of acetic acid is 2. It would increase on the addition of
a. hydrochloric acid
b. common salt
c. aqueous ammonia
d. sugar cane
22. Fermentation of glucose finally gives
a. CO₂ and CH₃OH
b. CO and alcohol
c. CO₂ and H₂O
d. CO₂ and C₂H₅OH
23. The pH of an aqueous solution of hydrochloric acid will be around
a. 2
b. 7
c. 12
d. 9
24. The acid used in batteries is
a. acetic acid
b. hydrochloric acid
c. sulphuric acid
d. nitric acid

25. The elements $^{30}\text{Si}_{14}$, $^{31}\text{P}_{15}$ and $^{32}\text{S}_{16}$ are called
a. isotones b. isobars c. isotopes d. nucleons

26. Two solutions are said to be isotonic when they
a. have the same osmotic pressure
b. have the same volumes
c. contain the same solute dissolved in them
d. have the same vapour pressure

27. Match list I correctly with List II and select your answer using the codes given below:

List I		List II	
A. Methane		1. C_2H_2	
B. Ethylene		2. C_2H_6	
C. Ethane		3. C_2H_4	
D. Acetylene		4. CH_4	

Codes:

	A	B	C	D
a.	4	3	2	1
b.	1	2	3	4
c.	2	3	4	1
d.	3	4	1	2

28. The bonds present in acetylene are
a. 3pi, 2 sigma bonds b. 2pi, 3 sigma bonds
c. 4pi, 1 sigma bonds d. 1 pi, 4 sigma bonds

29. An atom of iron is _____ times as heavy as an atom of hydrogen
a. 23 b. 8 c. 55 d. 238

30. Steel contains
a. 0.1 to 2% carbon b. 5 to 10% carbon
c. no carbon d. 20% carbon

31. Dilantin sodium is an
a. antihypertensive b. anticonvulsant
c. anti-inflammatory d. Antimicrobial

32. Avagadro's law is applicable to
a. solids b. Solids and liquids
c. gases and liquids d. Gases

33. The chemical name of Calomel is
a. Calcium chloride b. Mercuric chloride
c. Mercurous chloride d. Aluminium chloride

34. Match list I correctly with list II and select your answer using the codes given below:

List I		List II	
A. Brass		1. Copper and tin	
B. Bronze		2. Copper and zinc	
C. Solder		3. Steel and nickel	
D. Invar		4. Tin and lead	
		5. Copper and nickel	

Codes:

	A	B	C	D
a.	2	1	5	3
b.	1	2	4	3
c.	2	1	4	5
d.	2	1	4	3

35. i. A physical change alters the composition of the substance
ii. A reaction which produces heat is called exothermic reaction
a. false, true b. True, false c. false, false d. True, true
36. The isotope ${}^7\text{N}^{14}$ contains
a. 7 electrons b. 7 protons c. 7 neutrons d. all of these
37. The substance used in making hairdye is
a. silver chloride b. silver bromide c. silver iodide d. silver nitrate
38. Maximum 14 electrons are accommodated in sub shell
a. S b. P c. D d. F
39. Match list I correctly with list II and select your answer using the codes given below:
- | List I | List II |
|-----------------|-----------------------------|
| A. Baking soda | 1. Na_2CO_3 |
| B. Washing soda | 2. Solid CO_2 |
| C. Dry ice | 3. CaCO_3 |
| D. Marble | 4. NaHCO_3 |
- Codes:
- | | A | B | C | D |
|----|---|---|---|---|
| a. | 1 | 2 | 3 | 4 |
| b. | 2 | 1 | 4 | 3 |
| c. | 4 | 1 | 2 | 3 |
| d. | 4 | 1 | 3 | 2 |
40. The ion that does not cause hardness of water is
a. Na^+ b. Mg_2^+ c. CO_3^{2-} d. HCO_3^-
41. The bond formed by the donation of a pair of electron between the combining atoms is called _____
a. Ionic bond b. Covalent Bond c. Co-ordinate bond d. Hydrogen bond
42. Which among the following is an oxidizing agent?
a. H_2S b. Carbon c. H_2 d. H_2O_2
43. A gas deviate from ideal behaviour at
a. High temperature and low pressure
b. Low pressure and high temperature
c. Low temperature and high pressure
d. Low temperature and low pressure
44. In the reaction, $2\text{FeCl}_3 + \text{H}_2\text{S} \rightarrow 3\text{FeCl}_2 + 2\text{HCl} + \text{S}$
a. FeCl_3 acts as an oxidizing agent
b. FeCl_3 and H_2S both get oxidized
c. FeCl_3 gets reduced
d. H_2S gets oxidized

Which among the above statements are correct?

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

45. The Ionization energy of Sodium in KJ per mole is

- a. 496 b. 596 c. 4632 d. 5929

46. Aldol is

- a. 2 hydroxy butanol b. 3 - hydroxy butanol
c. 3 - hydroxyl butanal d. 2 - hydroxy butanal

47. Dual character of an electron was explained by

- a. Bohr b. Heisenberg c. de Broglie d. Pauli

48. The acid cannot be prepared from Grignard reagent is

- a. Formic acid b. Acetic acid c. Propionic acid d. Benzoic acid

49. Ultimate product of hydrolysis of protein is

- a. aniline b. aliphatic acid c. Amino acid d. Aromatic acid

50. The long mission space probe use _____ as power source

- a. Pu b. U c. Th d. Pm

51. The toxic element of Boran family is

- a. Boran b. Thallium c. Indium d. Gallium

52. Among the lanthanides, with increase in atomic number the tendency to act as reducing agent

- a. increases b. decreases c. no Change d. None of these

53. Which solution would posses the lowest boiling point

- a. 1% Nacl solution b. 1% Urea solution
c. 1% glucose solution d. 1% Sucrose solution

54. Electrolysis of potassium Succinate gives

- a. Ethelene b. Acetylene c. Ethane d. None of the above

55. Consider the following statements:

- I. Amalgams are alloys containing Hg.
II. Amalgams are always in liquid state.
III. Amalgams are highly coloured alloys
IV. Amalgams are alloys which resist corrosion

Of the statements:

- A. I alone is correct B. I and II are correct
C. I, II and III are correct D. All are correct

56. Match list I correctly with list II and select your answer using the codes given below:

- | List I | List II |
|--|-----------------|
| A. Nuclear model of an atom | 1. J.J. Thomson |
| B. Empirical atomic model | 2. Bohr |
| C. Elliptical orbits of electrons in an atom | 3. Rutherford |
| D. Model of hydrogen atom | 4. Sommerfeld |

Codes:

	A	B	C	D
a.	1	3	2	4
b.	1	2	3	4
c.	2	1	4	3
d.	3	1	4	2

57. Which one of the following is incorrectly matched?

- a. Mohr's salt - $\text{FeSO}_4(\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$
b. Basic salt - NaHCO_3
c. Basic salt - $\text{Cu}(\text{OH})\text{NO}_3$
d. Complex salt - $\text{K}_4\text{Fe}(\text{CN})_6$

58. Epsom salt is

- a. $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ b. $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ c. $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ d. None of these

59. The number of ions produced from one molecule of $\text{K}_4[\text{Fe}(\text{CN})_6]$ in aqueous solution is

- a. 4 b. 3 c. 5 d. 1

60. Match the following correctly and select the answer using the codes given below:

Molecule	Shape
A. Ammonia	1. Linear
B. Water	2. Planar
C. Boron trifluoride	3. V-shaped
D. Carbon-di-oxide	4. Pyramid shape

codes:

	A	B	C	D
a.	3	2	1	4
b.	3	1	4	2
c.	4	3	2	1
d.	1	2	3	4

61. Match list I correctly with List II and select your answer using the codes given below the lists:

List I	List II
A. Cinnabar	1. PbS
B. Zinc blende	2. HgS
C. Galena	3. $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$
D. Bauxite	4. ZnS

Codes:

	A	B	C	D
a.	2	1	4	3
b.	2	4	1	3
c.	1	3	2	4
d.	3	1	4	2

62. Match the items of list I with list II and select the correct answer using the codes given below the lists:

List I	List II
A. Tollen's reagent	1. Cupric acetate in acetic acid
B. Barfoed's reagent	2. Mixture of CuSO_4 sodium citrate and Na_2CO_3
C. Molisch reagent	3. Ammonical silver nitrate solution
D. Benedict's solution	4. Alcoholic α -naphthol and concentration. H_2SO_4

Codes:

	A	B	C	D
a.	3	1	4	2
b.	2	1	4	3
c.	2	3	4	1
d.	4	3	1	2

63. Match the items of list with list II and select the correct answer using the codes given below the lists:

List I
A. Neutral ferric chloride solution
B. Fehling's solution
C. Sodium nitro prusside solution
D. Ammonium molybdate reagent

List II
1. Identification of sulphur in organic compounds
2. To identify phenolic group
3. To identify phosphate
4. To identify reducing sugars

Codes:

	A	B	C	D
a.	3	1	4	2
b.	2	4	1	3
c.	2	3	4	1
d.	3	2	4	1

64. The fourth electron in atom will have the four quantum numbers as

	n	l	m	s
a.	2	0	0	-1/2
b.	1	0	0	+1/2
c.	2	1	0	+1/2
d.	1	1	1	+1/2

65. The number of orbitals in f sub-shell energy level is

- a. 3 b. 2 c. 5 d. 14

66. Radiocarbon dating is used to estimate the ages of

- a. babies b. fossils c. rocks d. ancient buildings

67. Silver nitrate produces a black stain on skin due to

- a. being strong reducing agent
b. its corrosive action
c. its reduction to metallic silver
d. none of these

68. The fertilizer essential for the growth of tobacco is

- a. superphosphate of lime b. urea
c. potassium nitrate d. ammonium sulphate

69. National chemical laboratory is at

- a. Delhi b. Kalpakkam c. Kolkata d. Pune

70. Acid present in Tea

- A. Citric Acid B. Lactic Acid
C. Tannic Acid D. Tartaric Acid

71. Helium is preferred to hydrogen in airships as it

- A. has greater lifting power
B. is less dense

- C. is cheaper
- D. does not form explosive mixture with air

72. The heat of neutralization is constant for
- A. strong acid - strong base
 - B. strong acid - weak base
 - C. weak acid - strong base
 - D. weak acid - weak base
73. Pickout the molecule containing coordinate bond
- A. CaCl_2
 - B. AlCl_3
 - C. NH_4Cl
 - D. MgCl_2
74. The element with the maximum number of isotopes in nature is
- A. carbon
 - B. uranium
 - C. hydrogen
 - D. lead
75. Which acid does not contain - COOH group?
- A. ethanoic acid
 - B. oxalic acid
 - C. phthalic acid
 - D. picric acid
76. Which one of the following is not found in protein?
- A. S
 - B. P
 - C. C
 - D. O
77. Silver nitrate produces a black stain on skin due to
- A. being strong reducing agent
 - B. its corrosive action
 - C. its reduction to metallic silver
 - D. none of these
78. Match the items of list with list II and select the correct answer using the codes given below the lists:
- | | |
|-------------------------------------|---|
| List I | List II |
| a. Neutral ferric chloride solution | 1. Identification of sulphur in organic compounds |
| b. Fehling's solution | 2. To identify phenolic group |
| c. Sodium nitro prusside solution | 3. To identify phosphate |
| d. Ammonium molybdate reagent | 4. To identify reducing sugars |
- Codes:
- | | | | |
|------|---|---|---|
| a | b | c | d |
| A. 3 | 1 | 4 | 2 |
| B. 2 | 4 | 1 | 3 |
| C. 2 | 3 | 4 | 1 |
| D. 3 | 2 | 4 | 1 |
79. Which one of the following is incorrectly matched?
- A. Mohr's salt - $\text{FeSO}_4(\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$
 - B. Basic salt - NaHCO_3
 - C. Basic salt - $\text{Cu}(\text{OH})\text{NO}_3$
 - D. Complex salt - $\text{K}_4\text{Fe}(\text{CN})_6$
80. Which of the following colloidal system does not exist?
- A. Solid in Gas
 - B. Liquid in Gas
 - C. Gas in Gas
 - D. Liquid in Liquid

81. Match the following

- | | |
|--------------|--------------------------|
| a. Aluminium | 1. Space ships |
| b. Mercury | 2. Precision instruments |
| c. Tungsten | 3. Barometer |
| d. Silver | 4. Filament |

	a	b	c	d
A.	2	1	3	4
B.	1	3	4	2
C.	2	3	4	1
D.	4	3	1	2

82. Artificial Radioactivity was discovered by

- | | |
|---------------|----------------|
| A. Becquerel | B. Roentgen |
| C. Rutherford | D. Irene Curie |

83. The splitting of spectral lines by external magnetic field is known as

- | | |
|------------------|-------------------------|
| A. Stark effect | B. Photoelectric effect |
| C. Zeeman Effect | D. de-Broglie waves |

84. When setting of plaster of paris occurs, the change that happens is

- | | |
|--------------------|--------------------|
| A. Volume decrease | B. Weight decrease |
| C. Volume increase | D. Weight increase |

85. The commonly - used medicine for typhoid is

- | | |
|------------------|------------------|
| A. chlorquin | B. ascorbic acid |
| C. a sulpha drug | D. chloromycetin |

86. The enzyme that hydrolyses cane sugar to glucose and fructose is

- | | | | |
|-----------|--------------|-----------|-------------|
| A. lipase | B. invertase | C. zymase | D. diastase |
|-----------|--------------|-----------|-------------|

87. Which one of the following types of glass can cut off ultraviolet rays?

- | | | | |
|---------------|----------------|---------------|------------------|
| A. Soda glass | B. Pyrex glass | C. Jena glass | D. Crookes glass |
|---------------|----------------|---------------|------------------|

88. Sulphuric acid is used in the manufacture of:

- | | | | |
|------------------------|---------------------------|------------------|---------------|
| 1. Fertilisers | 2. Dyestuff intermediates | | |
| 3. Pigments and paints | 4. Storage batteries | | |
| A. 1 and 2 | B. 2 and 3 | C. 1, 2, 3 and 4 | D. 1, 3 and 4 |

89. An acid used to remove inkspots is

- | | | | |
|----------------|-----------------|----------------|------------------|
| A. oxalic acid | B. butyric acid | C. lactic acid | D. tartaric acid |
|----------------|-----------------|----------------|------------------|

90. The substance used in making hairdye is

- | | |
|--------------------|-------------------|
| A. silver chloride | B. silver bromide |
| C. silver iodide | D. silver nitrate |

91. The oxidation number of Fe in $K_3[Fe(CN)_6]$ is

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

92. In a laboratory Acetylene is prepared by

- | |
|--|
| A. Action of water on calcium carbide in cold condition |
| B. Heating ethanol with Con. H_2SO_4 at $180^\circ C$ |
| C. Heating the mixture of anhydrous sodium acetate and soda lime |

D. None of these

93. Match the followings

	List I				List II			
a.	Law of Triads				1. Dobereiner			
b.	Law of Octaves				2. Newland			
c.	Periodic law				3. Mendeleev			
d.	Modern periodic law				4. Moseley			
	a	b	c	d				
A.	1	2	3	4				
B.	2	1	4	3				
C.	2	3	4	1				
D.	4	3	2	1				

94. $CH_3OH + CO \xrightarrow{?} CH_3COOH$

- A. $LiAlH_4$ B. Conc. H_2SO_4 C. $I_2 - Rh$ D. None of these

95. Sulphuric acid is manufactured by contact process. In the process, catalyst is

- A. Fe B. Pt C. Ni D. V_2O_5

96. King of metals is

- A. Al B. Cu C. Fe D. Au

97. Match the following

	List I				List II			
a.	Making permanent magnets				1. Manganese steel			
b.	Making Rail tracks				2. Cobalt steel			
c.	Making Razor blades				3. Nickel steel			
d.	making aeroplane parts				4. Hard Steel			
	a	b	c	d				
A.	2	1	4	3				
B.	1	2	3	4				
C.	3	4	1	2				
D.	4	2	1	3				

98. At which temperature is clinker formed when cement slurry is heated in a rotary kiln?

- A. 578 K B. 700 K C. 1773 K D. 428 K

99. Chlorine gives bleaching powder when mixed with

- A. Lime B. lime water C. dry slaked lime D. limestone

100. Acids react with metals and give _____ gas

- A. O_2 B. H_2 C. N_2 D. None of these

IV CHEMISTRY ANSWER

1	2	3	4	5	6	7	8	9	10
B	C	B	B	A	A	A	A	A	A
11	12	13	14	15	16	17	18	19	20
D	A	A	C	C	B	C	C	D	A
21	22	23	24	25	26	27	28	29	30
C	D	A	C	A	A	A	B	C	A
31	32	33	34	35	36	37	38	39	40
C	D	C	D	A	D	D	D	C	D
41	42	43	44	45	46	47	48	49	50
C	D	A	B	A	C	C	A	C	A
51	52	53	54	55	56	57	58	59	60
B	B	A	A	A	D	C	B	C	C
61	62	63	64	65	66	67	68	69	70
B	A	B	C	D	B	C	C	D	C
71	72	73	74	75	76	77	78	79	80
D	A	C	B	D	A	C	B	C	C
81	82	83	84	85	86	87	88	89	90
B	D	C	C	D	B	D	C	A	D
91	92	93	94	95	96	97	98	99	100
B	A	A	C	D	C	A	C	C	B