OFFICE OF THE DEPUTY DIRECTOR OF PUBLIC INSTRUCTIONS

GLANCE ME ONCE
Sub: General Science
2018-19

(1 Mark)

1. Identify the reactants and products in the following reaction
   $Zn+2HCl \longrightarrow ZnCl_2+H_2$
2. Why should a magnesium ribbon be cleaned before burning it in air?
3. Why do we apply paint on iron articles?
4. Why should curd and sour substances not be kept in brass and copper vessels?
5. Why does an aqueous solution of an acid conduct electricity?
6. What is the common name of the compound $CaOCl_2$?
7. Name the substance which on treatment with chlorine yields bleaching powder?
8. Name the sodium compound which is used for softening hard water.
9. Baking soda is used in soda-acid fire extinguishers. Give reason
10. What is Malleability?
11. What is Ductility?
12. Why are school bells made up of Metal?
13. Name the non-metal which possess lustre?
14. Name any two soft metals.
15. Why is sodium kept immersed in kerosene oil?
16. Name the metals that are found in the native state.
17. What chemical process is used for obtaining a metal from its oxide?
18. Name the metals which do not corrode easily?
19. What are alloys?
20. Platinum, gold and silver are used to make jewellery . Give reason
21. What are triads ?
22. What are Octaves?
23. Who proposed the law of Triads?
24. Who proposed the law of Octaves?
25. State Mendeleev's periodic law?
26. State Modern periodic law?
27. What is catenation?
28. How does the valency vary in a period on going from left to right ?
29. Define
    - Ohm's law
    - Power
    - Resistance
    - 1 coulomb
    - Potential difference
    - 1 volt
    - 1 Ohm
30. Name the units for the following
    a. Current b. Electric charge c. Work d. Resistivity

31. Tungsten is used for filament of electric lamps. Why?
32. Define Solenoid
33. Define Fuse
34. Why is it necessary to earth metallic appliances ?
35. The needle is deflected on passing an electric current through a metallic conductor why?
36. The unit of magnetic field.
37. Two magnetic field lines are never found to cross each other. Why?
38. Write the use of electromagnets.
39. What is short circuit?
40. When does overloading occurs?
41. State electromagnetic induction.
42. Name the principles behind the following
a) Dynamo b. Motor
43. Write formula of (a) Lens (b)Mirror
44. What is magnification?
45. Define the term refractive index
46. What is principle focus of a lens?
47. What is power of lens?
48. Define 1 dioptre of power of a lens.
48. If magnification of lens is more than one, then what is the size of the image?
49. What is the power of accomodation?
50. What is reason for refraction of light in atmosphere?
51. What is Tyndall effect?
52. What is disperation of light?
53. What is angle of deviation
54. Name the components of Biogas?
55. Why Solar cookers are coated black?
56. What is Geo thermal energy?
57. Wind energy is not convenient sources of energy. Why?
58. What is good fuel?
59. Name the elements in the solar cell.
60. Which of the following groups contain only biodegradable items?
a) Grass, flowers, leather
b) Grass, wood, Plastic
c) Fruit-peels cake& lime juice
d) cake, wood, grass
61. What is Biological Magnification?
62. List two problems caused by non-biodegradable waste that we generate.
63. Why is damage to the ozone layer a cause for concern?
64. What steps are being taken to limit ozone depletion?
65. What is ecosystem?
66. What is food chain?
67. What is food web?
68. What is the role of decomposers in ecosystem?
69. How can you help in reducing the problem of waste disposal? Give any two methods
70. Why are green plants called producers?
71. Why should we conserve forests and wild life?

72. List the advantages of building dams.
73. List two causes of pollution of river Ganges.
74. Name some traditional water harvesting system in India
75. What is Sustainable development? State its two main objectives
76. List four activities on 5-R approach
77. Define (i) Biomass (ii) Anaerobic degradation
78. Why are forests considered "Biodiversity hot spots?
79. State meaning of "biodiversity" list two advantages
80. List four advantages of conserving water?
81. suggests two measure for controlling Co2 levels in atmosphere.

Answer the following: (2 Marks)

1. Classify the following into physical change and chemical change
a) glowing of an electric bulb
b) Digestion of food
c) Formation of dew
d) Burning of carbon
b) sodium + Water $\longrightarrow$ sodium hydroxide+Hydrogen
2. List the types of chemical reactions
3. Identify the type of chemical reactions in the following
a) $CaO+H_2O \longrightarrow Ca(OH)_2$
b) $CaCO_3 \longrightarrow CaO+CO_2$
4. Identify the type of chemical reactions in the following
a) $Fe+CuSO_4 \longrightarrow FeSO_4+Cu$
b) $Na_2SO_4+BaCl_2 \longrightarrow BaSO_4+2NaCl$
5. Name the following
a) The addition of oxygen from a substance
b) The removal of oxygen from a substance
6.Oil and fat containing food items are flushed with nitrogen. Why?
7. Explain Corrosion with an example
8. Explain Rancidity with an example
9. While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?
10. You have two solutions, A and B. the pH of solution A is 6 and pH of Solution B is 8. Which solution has more hydrogen ion concentration? Which of this is acidic and which is basic?
11. Under what soil condition do you think a farmer would treat the soil of his fields with quick lime (Calcium oxide) or slaked lime (calcium hydroxide) or chalk (Calcium carbonate)
12. In a bakery, baking powder was not added white preparing cake. Give reasons for the same
13. Name the acid present in the following
a) Tomato b) Vinegar c) Tamarind d) lemon
14. Mention the pH of the following substances
a) Gastric juice b) Pure water c) Milk of Magnesia d) sodium hydroxide solution
15. Tooth decay starts when the pH of the mouth is lower than 5.5. Give your reasons
16. Write an equation to show the reaction between plaster of Paris and water?

17. Write any two uses of washing soda.
18. Write any two uses of Bleaching powder.
19. Name the important products from the chlor-alkali process.
20. What are amphoteric oxides? Give examples.
21. How are alkalis prepared ?
22. Write the differences between metals and non-metals?
23. Write the electron dot formula for sodium, oxygen and magnesium.
24. Ionic compounds have high melting points. Give reasons
25. Show the formation of Na_2O by the transfer of electrons
26. Show the formation of MgO by the transfer of electrons
27. Name the metals that are extracted by reduction using carbon.
28. Name the metals that are extracted by electrolysis.
29. Define the following terms
a) Mineral b) Ore c) Gangue
30. State two ways to prevent the rusting of iron?
31. Give reasons why copper is used to make hot water tanks and not steel
32. Match the following column 'A' with column 'B'

Alloys of iron	constituents and uses
1. Stainless steel	a)copper and zinc – used in decorative materials
2. Nickel steel	b) iron, carbon , nickel-machinery parts and drilling instruments
3. Alnico	c) iron, carbon , nickel chromium- surgical instruments and utensils
4. Invar steel	d) iron-, nickel, aluminium cobalt- permanentmagnets
	e) Iron, nickel and carbon pendulum of clocks, precision measuring tapes
	f) Iron, and carbon pipes, nails, sheets, tools

33. Write the electron dot formula of CO_2
34. Write the electron dot structure of ethane.
35. Write the difference between saturated and unsaturated hydrocarbons.
36. Name the following :
37. Write the difference between ethanol and ethanioc acid based on physical properties
38. Write the difference between ethanol and ethanoic acid based on chemical properties
39. Why does micelle formation take place when soap is added to water? Will a micelles be formed in other solvents such as ethanol also?
40. What are homologous series?
41. Explain the mechanism of the cleaning actions of soaps.
42. Explain the formation of scum when hard water is treated with soap.
43. What are the disadvantages of Mendeleev's periodic table
44. What is the valency of magnesium with atomic number 12 and sulphur with atomic number 16?
45. Which elements have the largest and the smallest atoms in the 3^{rd}period?
46. How does the atomic radius change as you go from left to right in a period?

47. How does the atomic size vary as you go down a group?
48. On which side of the Periodic Table do you find metals, and non-metals.
49. The atomic number of a element 'X' is 12 write its electronic configuration and find out
a) its period
b) its group
c) and block
50. Write the factors on which the resistance of a conductor depends?
51. Parallel connection is more advantageous than series why?
52. Explain the Joule's heating effect?
53. List the applications of Joule's heating effect?
54. Alloys are used in the electrical heating device why ?
55. An electric iron draws a current 0.5A when voltage 200V. Calculate the amount of charges flowing through it in 1 hour?
56. Write the properties of Magnetic lines of forces?
57. Explain right hand thumb rule.
58. Differentiate between electric motor and generator.
59. What is earthing , write their advantages?
60. On what factors does the e.m.f of the coil depends?
61. Write the uses of solenoid?
62. Why do we prefer a convex mirror as a rear view mirror in vehicles.
63. A concave mirror produces three times magnified real image of an object placed at 10cm in front of it. Where is the image located?
64.Refractive index of water is 1.33. What is the meaning of this statement.
65. Light enter from air to glass having refractive index 1.50. What is the speed of light in the glass.
66. Draw the ray diagram to show principle focus in concave lens.
67. Draw the ray diagram to show the formation of image in convex mirror when object is placed in between R and O
68.What are the uses of mirror
69. Find the focal length of a lens of power -2.0D. What type of lens is this?
70. Why do stars twinkle?
71. Why does the sun appear reddish early in the morning?
72.Plants do not twinkle. Why?
73. Why is the colour of the clear sky is blue?
74. A person can't see distant object clearly. Why?
75. Doctor advised to use bifocal lens spectacle. Why?
76. Hydrogen has been used as a rocket fuel, would you consider it a cleaner fuel than CNG? Why or why not?
77. If you would use any sources of energy for heating your food which would you use and why?
78.How can you consider the given sources of energy is a ideal one?
79. What are the qualities of an ideal fuel.
80. Which reaction takes place in the biogas plant?
81. What kind of mirror would be best suited for use in a solar cooker? Why?
82.Write the advantages of nuclear energy?
83. Write the limitation of Geo thermal energy?

Answer the folowing:(3 Marks)

1. Define chemical combination with an example.
2. Define chemical decomposition with an example.
3. Define chemical Displacement with an example.
4. Define Double Displacement with an example.
5. What is a redox reaction? Give an example
6. What will happen if a solution of sodium hydrocarbonate is heated? Give the equation of the reaction involved
7. Draw a neat diagram showing Acid solution in water conducts electricity
8. Draw a neat diagram showing the – Testing the conducting of a salt solution
9. Write equations for the reactions of

a) iron with steam

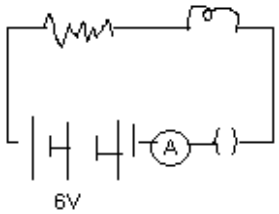
b) calcium and potassium with water

10. Which gas is produced when dilute hydrochloric acid is added to a reactive metal? Write the chemical reaction when iron reacts with dilute H_2So_4
11. What would you observe when zinc is added to a solution of iron (II) sulphate? write the chemical reaction that takes place
12. Give examles for a single, double and triple bonds in carbon atoms.
13. Name the simplest hydrocarbon, and write its structural formula.
14. Write the molecular formula and structural formula of Benzene.
15. What is hydrogenation? What is its industrial application?
16. What are metalloids? Give examples
17. What is electronegativity. What happens to electro negativity across a period and down a group?
18. How does the electronic configuration of an atom relate to its position in the modern periodic table?
19. An electric lamp, whose resistance is 20Ω and a conductor of 4Ω resistance are connected to a 6V battery calculate.

a)Total resistance of the circuit

b) Current through the circuit

c) Potential difference across the electric lamp & conductor.



20. How can three resistors of resistances 2 Ω, 3 Ω & 6 Ω be connected to give total resistance of

4 Ω b. 1 Ω

21. An electric iron consumes energy at a rate of 840w when heating is at the maximum rate and 360w when the heating is at the minimum. The voltage is 220V what are the current and the resistance in each case.
22. A write sign convention for spherical mirror.
23. The image formed by a convex mirror of focal length 20cm is a quarter to the objects. What is the distance of the object from the mirror.
24. A concave mirror produces three times magnified real image of an object placed at 10cms in front of it. Where is the image located.
25. What are the changes in the eye the person can't see the object faraway.
26. What are the changes in the eye the person can't see the near by object

27. Environmentalist always oppose the establishment of nuclear power reactor why?
28. How has the traditional use of wind and water energy been modified for our convenience?
29. Biogas plant
30. Refraction of light through a triangular glass prism / glass slab
31. The position size and the nature of the image formed by a convex lens for various position of the object.
32. The position size and the nature of the image formed by a concave lens for various position of the object.
33. Ray diagram for the image formation by a concave mirror / convex mirror
34. Circuit diagram
35. Resistors in series / parallel
36. Magnetic field lines around the bar magnet
37. Symbols in circuit diagrams
38. Electric Motor
39. Electric generator
1. A current carrying rod experiences mechanical force. Explain with experiment.
2. Describe the simple experiment to show magnetic lines in a straight conductor.

(4 Mark)

1. Draw a neat diagram of the electrolysis of water and label the parts
2. Write the balanced equation for the following chemical reactions?
a) Hydrogen+Chlorine $\longrightarrow$ Hydrogen chloride
3. Draw a neat diagram showing the reaction of zinc grumbles with dilute sulphuric acid and testing hydrogen gas by burning
4. Draw a neat diagram showing the Action of steam on a metal ?
5. Draw a neat diagram showing the Electrolytic refining of copper
6. Give an example of a metal which
a) is a liquid at room temperature
b) can be easily cut with a knife
c) is the best conductor of heat
d) is a poor conductor of heat
7. Match the following

Class of compounds	formula of functional group
a) alcohol	
b) Aldehyde	
c) ketone	
d) carboxylic acid	

8. How many structural isomers can you draw from pentane?
9. Draw the structure for the following compound
a) Ethanoic acid b) Bromopentane c) Butanone d) Hexanal

10. a) A doctor has prescribed a corrective lens of power +1.5D. Find the focal length of the lens is the prescribed lens is diverging or converging.
b) Name the type of mirror used in the following
i) Head lights of a carSolar furnace
ii) Rear view mirror of a vehicle.

(5 Mark)

1. Which of the following is a plant hormone?
a) Insulin b) Thyroxin c) Oestrogen d) Auxin
2. The brain is responsible for
a) thinking b) regulating the heart beat c) balancing the body d) all of the above.
3. The correct order of flow of information through the neuron

a) ADFBCGE b) ABCDEFG c) ABFGDCE d) EGBFDAC
4. The plant harmone which is shade loving
a) Auxin b) Gibberlin c) cytokinin d) Absicisic acid
5. The harone which regulates Metabolism
a) Adrenaline b) estrogen c) thyroxin d) pituitary
6. What is the significance of reflex action
7. A young green plant receiver sunlight from one direction only. What will happen to its roots and shoots?
8. Mention the part of the body where gustatory and olfactory receptors are located?
9. Name the hormone that helps in regulating level of sugar in our blood. Name the gland that seretel it
10. Why adrenaline hormone called as emergency hormones
11. Why hormones are called as chemical messengers
12. How are invduntary actions and reflex actions difference from each other?
13. Why is it advised to use iodized salt in our diet.
14. How nervous impulses travel in the neuron.
15. Which is the largest part of the brain? What are its functions.
16. Draw a labelled diagram of a basic unit which carry impulse.
17. Draw a labelled diagram of Reflex are.
18. Draw a labelled diagram of Human brain
19. (a) Which plant hormone is present in greater concentration in the areas of rapid cell division?
b) Give one example of a plant growth promoters and a plant growth inhibitor
c) How auxins help in bending of plant stem towards light.
20. Which gland is master of master gland? What does it release. Write its function.
Herdity and evolution
21. The correct order of the following diagram

a) ABCD b) DBCA c) BCDA d) DCBA

22. The correct order of binary fission in Leishmania is

a) 1, III, II, IV b) I, II, III, IV c) I, II, IV, III d) I, III, IV, II

23. The correct order of the following diagram

a) ABCD b) ADBC c) ACBD d) DCBA

24. Reproduction in planaria

a) budding b) fission c) regeneration d) fragmentation

25. The hormone secrested in puberty stage of male

a) Adrenalinb) insulin c) Testosteron d) estrogen

(6 Mark)

1. The breakdown of pyruvate to give carbondioxide, water and energy takes place

a) cytoplasm b) mitochondria c) chloroplast d) nucleue

2. The organisme which breakdown the food materials outside the body and then absorbs it

a) bread mould b) yeast c) mushroom d) above all

3. when guard cell swell so

a) water flows into the cell

b) Stomata opens

c) water flows out of the cell

d) stomata close

a) A and B b) C and D c) B and D d) A and D

4. When we breathe in, we lift our ribs out and diagphragm becomes

a) swells b) flattens c) shrink d) enlarged

5. Nitrogenous wastes formed in animals

a) urea b) uric acid c) Ammonia d) all the above

6. What are the two end products of anaerobic respiration?

7. What are the enzymes secreted by the stomach?

8. Why plant respiration is slower than animal respiration?

9. What will happen to the plants if its xylem is removed?

10. Which pancreatic enzymes is effective in digesting proteins?

11. Pancreas is called as both endocrine and exocrine gland why?

12. Guard cells help the stomata in opening and closing. How?
13. Why does water enter continuously into the root xylem?
14. What is role of saliva in the digestion of food?
15. What is the difference between aerobic and anaerobic respiration?
16. What advantage over an aquatic organisms does a terrestrial organism have with regard to obtaining oxygen for respiration
17. Write the function of each of the following
a) blood vessels b) blood platelets c) lymph d) RBC
18. Herbivores need longer small intestine give reason
19. warm blooded animals require oxygenated blood for circulation. give reason
20. What is translocation? Which tissue takes part in this
21. Explain the process of glycolysis in
a) presence of oxygen b) in the absence of oxygen c) when the lack of oxygen
22. What is stomata? Draw a labeled diagram of opening and closed stomata
(draw a heat labeled diagram of the plant structure which exchange the glass)
23. State the difference between autotrophic nutrition and heterotrophic nutrition.
24. Draw a neat diagram of human organ system which removes nitrogenous wasters from the blood
25. Draw a neat diagram of human alimentary canal label the part which secreter pepsin lipase
66. Draw a neat labeled diagram of sclumatic sectional view of the human pumping organ
27. Draw a neat diagram of nephron's label the part where selective reabsorption of salts & water takes place
28. A mendelian experiment consisted of breeding fall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers. But almost half of them were short. This suggests that the genetic make-up of the fall parent can be depicted as
a) TTWW b) TT ww c) TtWW d) TtWw
29. One of the example of two analogous organs can be the wings of parrot and
a) Flipper of whale
b) Foreleg of Horse
c) Front leg of Frog
d) Wings of Housefly
30. An example of homologous organs is
a) our arm and a dogs fore leg
b) our teeth and an elephants tusks
c) potato and runners of gran
d) all of the above
31. What is monohybrid cross?
32. Who is Father of genetics?
33. Why is the progeny always tall when a tall pea plant is crossed with short pea plant?
34. What is Dihybrid cross?
35. What is speciation?
36. What are fossics
37. What will be the sex of a child who inherits Y chromosome from his/her father?

38. Define variation in relation to a species. Why is variation beneficial to the species?
39. Why did mendal select pea plant for experimentation?
40. What are chromosomes? Where are they located in the cell?
41. Differenceate acquired haite and inherited trails
42. What are homologous organs? Give eg
43. Explain the process of sex determination in human beings
44. How is the equal genetic contribution of male and female parents ensured in the progeny.
45. Explain the importance of fossies in deciding evolutionary relationships?
46. What is speciation? List four causes for speciation.
47. Briefly explain the evolution of wild cabbage
48. Give two examples which undergo regeneration processes
49. What is Fission? Give eg
50. What is Fragmentation? Give eg
51. What is Regeneration? Give eg
52. What is vegetative propagation?
53. What is pollination?
54. How variations are useful in animals?
55. Define budding? Where does it occur?
56. What is cross pollination? What are its advantages?
57. What is (a) menstruation b) Gestation period
58. What are the different methods of contraception
59. Draw a labelled diagram of sexual reproductive in plants.
60. Draw a labelld diagram of germination of pollen on stigma
61. illustrate the following with the help of suitable diagrams
a) spore formation in rhizopus
b) multiple fission in placmodium