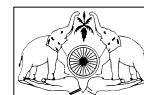




DIET MALAPPURAM & VIJAYABHERI MALAPPURAM
SSLC MODEL EXAMINATION, MARCH 2022



SET-1

Time: 1.45 Hrs

Total Score: 40

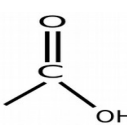
CHEMISTRY

PART I

A Session

Answer any Four questions from 1 to 6 (1 score each)

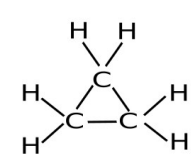
(4x1=4)

1. Which of the following is not a possible subshell of an atom?
(2s, 4d, 3f, 2p) (1)
2. Write the name of this functional group (1)

3. Find the product formed by dissolving ammonia in water by completing the chemical equation. $\text{NH}_3 + \text{H}_2\text{O} \rightarrow \text{-----}$ (1)
4. Name the monomer of Teflon. (1)
5. Find the relation (1)
Copper pyrites : CuFeS_2
Calamine :
6. Which of the following is a saturated hydrocarbon (1)
(C_2H_4 , C_2H_6 , C_2H_2 , C_3H_6)

B Session

Answer all questions from 7 to 9 (1 score each)

(3x1=3)

7. The molar volume at STP is -----L (1)
8.  Write the IUPAC name of this compound (1)
9. Which metal is deposited at the cathode when electricity is passed through molten sodium chloride? (1)

PART II

A Session

Answer the following question. (2 Score)

(1x2=2)

10. The subshell electronic configuration of an element is given below.
 $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2$
 - a) To which block of the periodic table does this element belongs? (1)
 - b) Write the shortest form of subshell electronic configuration using the symbol of noble gas preceding that element (1)

B Session

Answer any One question from 11 to 12 (2 Score)

(1x2=2)

11. i) $\text{CH}_3\text{-O-CH}_3$
ii) $\text{CH}_3\text{-CH}_2\text{OH}$
Whether these are isomers? Give reason (2)
12. Pick out the characteristics of f block elements from given below (2)
- i) they are Transition elements.
 - ii) the last electrons are filled up in the penultimate shell.
 - iii) the last electrons are filled up in the antipenultimate shell.
 - iv) used as catalysts in the petroleum industry.

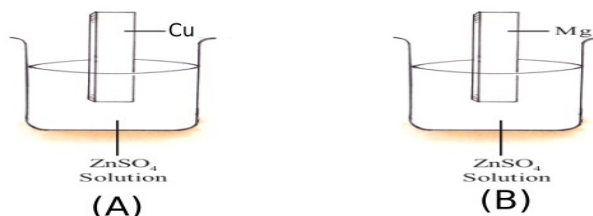
PART III

A Session:

Answer any Three questions from 1 to 6 (1 score each)

(3x3=9)

13. Analyse the figure and answer the following questions.
[Order of reactivity: $\text{Mg} > \text{Zn} > \text{Cu}$]



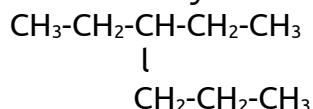
- a) In which beaker does the chemical reaction takes place. Why? (2)
b) Write the chemical equation of this reaction (1)
14. The relation between the volume and pressure of a definite mass of gas is given below. (Temperature is constant)

pressure P (atm)	volume V (ml)
1	20
X	10
4	Y

- a) Find X and Y (2)
b) Which is the gas law related to this? (1)
15. The sub shell electronic configuration of certain elements are given.
Symbols are not real.
- P- $1s^2 2s^2 2p^4$
 - Q- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2$
 - R- $1s^2 2s^2 2p^6 3s^2$
 - S- $1s^2 2s^2 2p^6$
- a) Which element has high ionisation energy? (1)
b) Which element shows variable oxidation state? (1)

c) Write the chemical formula of the compound formed by the combination of element P and R (1)

16. The structural formula of a hydrocarbon is given.



a) Write the molecular formula (1)

b) Name the branch (1)

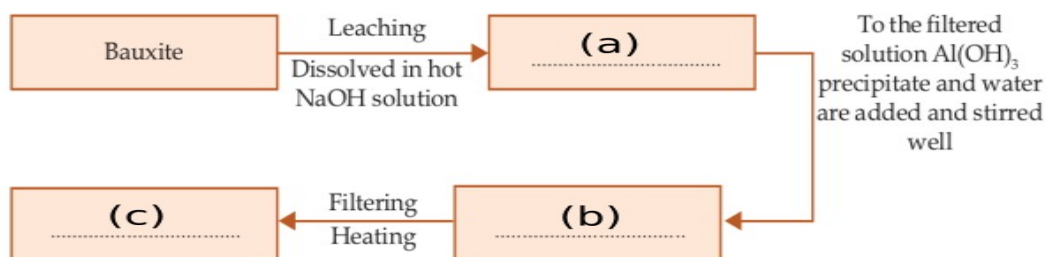
c) Write the IUPAC name of this hydrocarbon (1)

B Session

Answer the following question. (3 Score)

(1x3=3)

17. Complete the flow diagram related to the concentration of Bauxite.



a) Find a, b, and c (3)

PART IV

A Session

Answer any two questions from 18 to 20 (4 score each)

(2x4=8)

18. The molecular mass of CO₂ is 44.

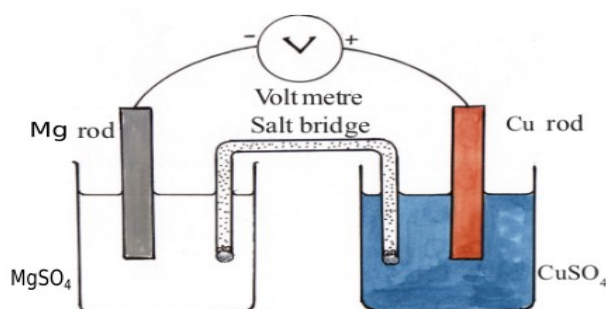
a) What do you mean by one Gram molecular mass(1GMM) (1)

b) Find the mass of 1GMM CO₂ (1)

c) Find the number of molecules in 1GMM CO₂ (1)

d) How many mol molecules are present in 220g CO₂ (1)

19. A Galvanic cell is depicted below. (order of reactivity : Mg>Cu)



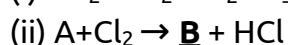
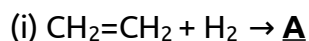
a) From which metal to which metal do the electron flow? (1)

b) Write the chemical equation of the reaction taking place at anode (1)

c) In which electrode reduction occurs? (1)

d) Write the energy change in a Galvanic cell (1)

20. Two chemical reactions are given.



- a) Find A and B (2)
 b) Write the IUPAC name of B (1)
 c) To which chemical reaction does reaction(i) belongs? (1)

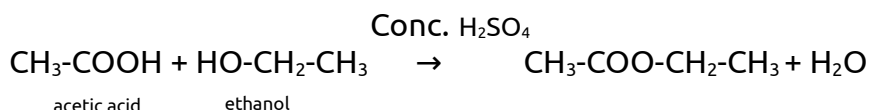
Part IV

B Session

Answer any one question from 21 to 22. (4 score each)

(1x4=4)

21. a) Which property of sulphuric acid is shown in the situations given below.
 i) When some drops of conc. Sulphuric acid is added to sugar taken in a watch glass, a black substance is obtained. (1)
 ii) In the preparation of chlorine, it is passed through conc. Sulphuric acid. (1)
 b) Which is the black substance obtained in situation (i)? (1)
 c) Why conc. Sulphuric acid is not used as drying agent in the preparation of ammonia (1)
22. The chemical equation of a reaction done by students in a Laboratory is given below.



- a) Pickout the ester from this chemical equation (1)
 b) Write the name of ester (1)
 c) Name the carboxylic acid and alcohol needed to prepare ethyl butyrate ester (2)

PART V

A Session

answer any one question from 23 to 24. (5 score)

(1x5=5)

23. The main ore of iron is Haematite. Haematite is converted into iron in a blast furnace.
- a) Which method is used to concentrate the ore Haematite? (1)
 b) Which are the raw materials added into the blast furnace other than Haematite (1)
 c) Which compound act as reducing agent in the blast furnace? (1)
 d) Write the chemical equation of the formation of the slag (1)
 e) Name the Iron obtained from the blast furnace. (1)

24. The chemical equation of the industrial preparation of Ammonia is given.



- a) Name this process (1)
 b) How does the following factors influence the rate of forward reaction. [system is in equilibrium]
 (i) Increase the concentration of Nitrogen (1)
 (ii) Pressure is decreased (1)
 (iii) Temperature is decreased (1)
 c) Write any one characteristics of chemical equilibrium. (1)

A. Answer all questions from 7 to 9. Each carries 1 score.

7. From those given below identify the hormone that is not produced by the adrenal gland.

Aldosterone, Epinephrine, Cortisol, Vasopressin.

8. Fill in the blanks by analysing the table.

Pathogen	How the cells are affected	Remedy
Fungus	Producing toxins	Antifungal medicines
Virus	..... ( a)	Antiviral medicines
Bacteria	..... ( b)	Antibiotics

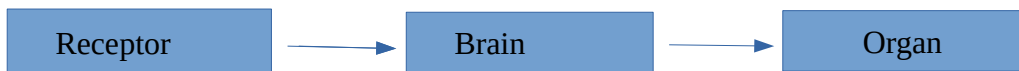
9. Which of the following activities take place under the control of the parasympathetic system.

Urinary bladder contracts, glycogen is converted in to glucose, Gastric activities slow down, production of saliva increases.

PART II

A. Answer the following questions. Carrying 2 scores.

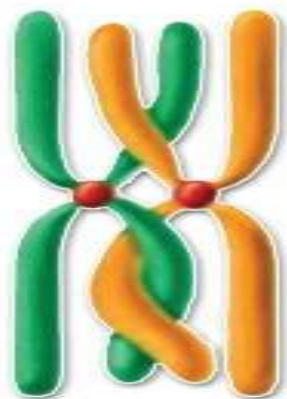
10. Observe the illustration on impulse transmission through nerves and answer the questions.



- a) What kind of nerves do X and Y indicate.
- b) What is the significance of synapse in impulse transmission.

B. Answer any one question from 11 to 12. Carrying 2 scores.

11. Analyse the illustration and answer the questions



- a) Which is the process illustrated above.
- b) Write the role of this process in causing variations in organisms.

12. Identify and write the parts X and Y in the flow chart related to inflammatory response.



PART III

A. Answer any three questions from 13 to 16. Each Carries 3 scores.

13. Opinion of 3 students during a discussion on fever are given below.

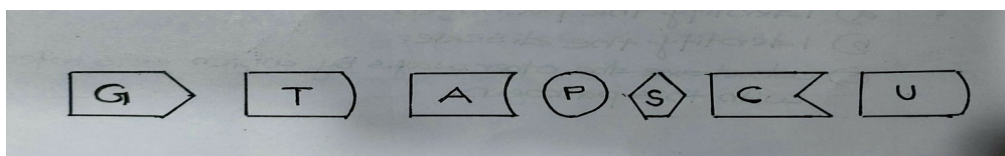
Student 1 : fever can cured through self medication

Student 2 : fever should be treated by finding out the real cause.

Student 3 : fever need not be treated at all.

- To which opinion do you agree with. Write justification.
- How does fever become a defence mechanism of the body?

14. The components of nucleotide are given below. Answer the questions through illustrations using these components.



- Illustrate the nucleotide which is found only in RNA.
- Illustrate the nucleotide which is found only in DNA.

15. Some statements which are related to one pathogen are given below.

- Included in the Virus category.
- Transmitted through body fluids.
- They enters the body and multiplies using the genetic mechanism of lymphocytes.

- Name the virus mentioned above.
- Identify the disease.
- What are the other ways of transmission of this disease.

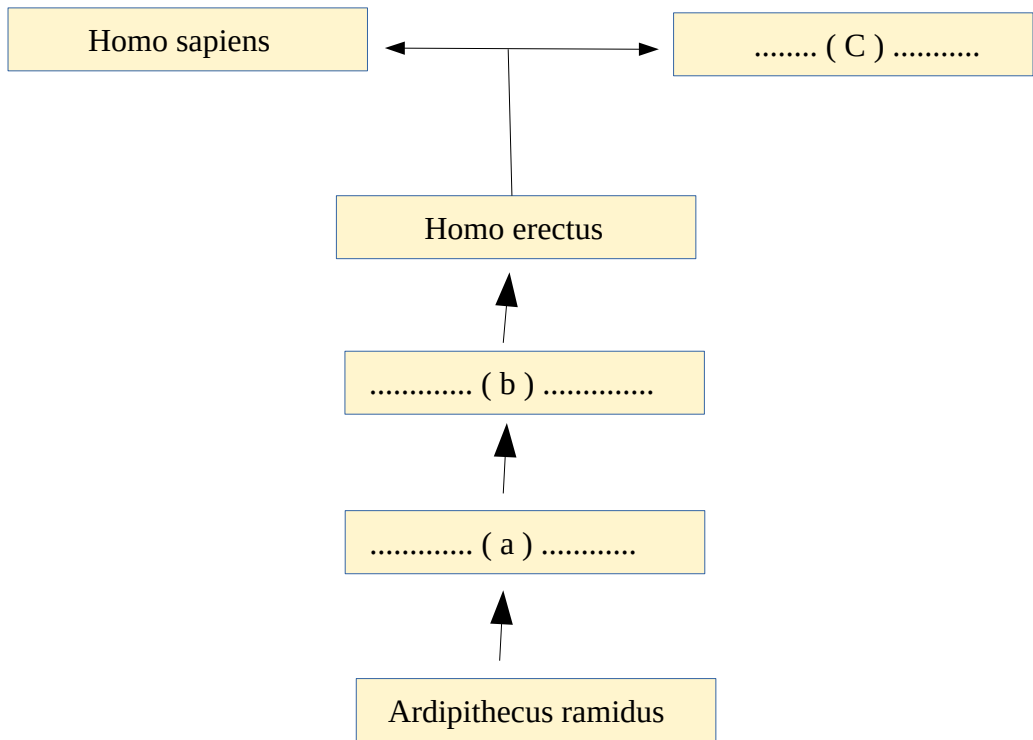
16. Vision is enabled when the impulse from the retina reaches the cerebrum through the optic nerve

- Draw a flow chart showing the pathway of light from cornea to retina.
- There is no vision at the point where the optic nerve starts. why?

B. Write down the answer of the following question. 3 score

17. The links in the evolutionary history of modern man are given in the box. complete the illustration choosing the appropriate ones from the box.

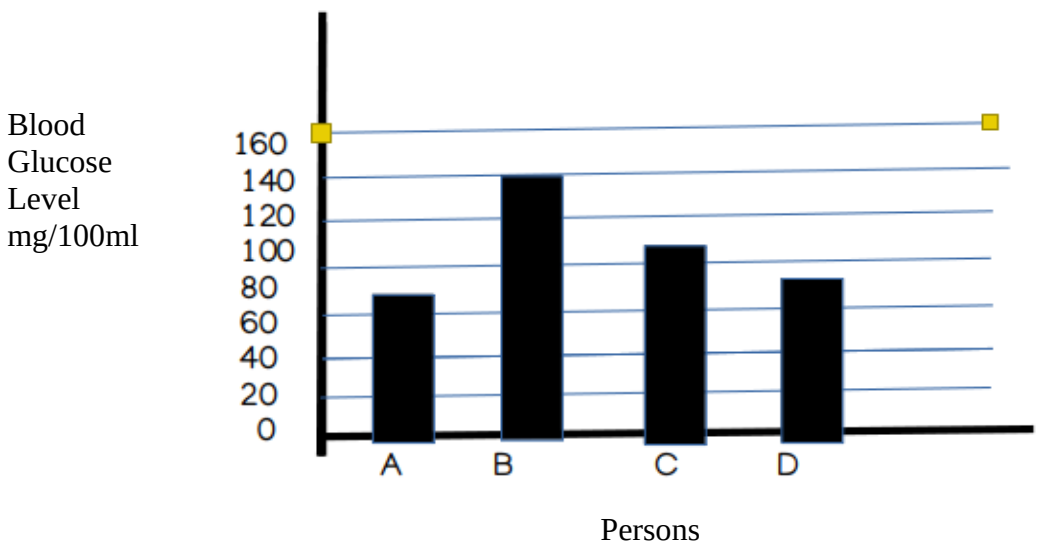
Homo habilis, Australopithecus afarensis, Ardipithecus ramidus, Homo erectus, Homo neanderthalensis, Homo sapiens



PART IV

A Answer any two question from 18 to 20.Each carries 4 scores

18. Examine the graph indicating the blood glucose level of different persons before breakfast



- a) Which person is affected by diabetes?
- b) Who have normal level of glucose in blood?
- c) Write two actions of insulin to prevent the rise in the level of glucose in blood.

19. Read the news report given below and answer the following questions

The deadbodies identified through DNA test
Malappuram: The deadbodies of the deceased in the landslide disaster occurred last month handed over to the relatives after identifying them through DNA test

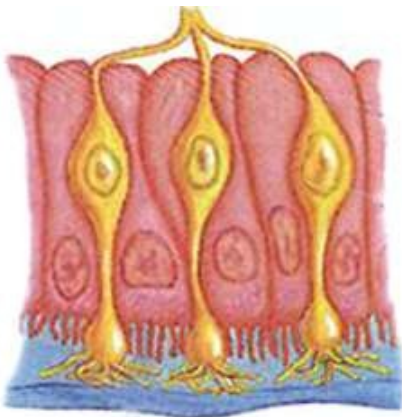
- a) What is the basis of DNA test?
 - b) How is possible to identify relations through DNA test ?
 - c) Write two other possibilities of this technology.
20. Observe the table related with blood groups

Blood groups	Antigen	Antibody
A	A	b
B	..... X	a
AB	A and B	nil
O	nil	..... Y

- a) Identify and write ‘X’ and ‘Y’
- b) What is the basis of grouping blood as + ve and - ve ?
- c) Every one cannot receive blood from all blood groups why ?

B. Answer any one question from 21 to 22. Each carries 4 scores .

21. Observe the picture given below and answer the questions.



- a) Which is the receptor given in the figure ?
- b) Which sense organ is this receptor seen in ?
- c) What is the function of this receptor ?
- d) Write the function of mucus seen associated with this receptor.

22. Complete the illustration of the second generation obtained from the hybridization in which two traits of a plant are considered.

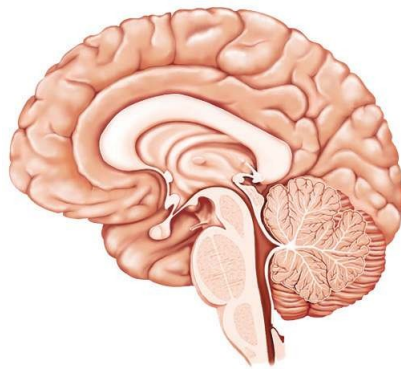
Indicators
Dominant character: Tallness, Red colour of flower
Recessive character: Dwarfness, White colour of flower.

	TR	Tr	tR	tr
TR	TTRR	..... A	TtRR	..... B
Tr	..... C	TTRr	..... D	Ttrr
tR	TtRR	..... E .....	..... F .....	..... G
tr	..... H	Ttrr	ttRr	ttrr

PART V

A. Answer any one question from 23 to 24. Each carries 5 score.

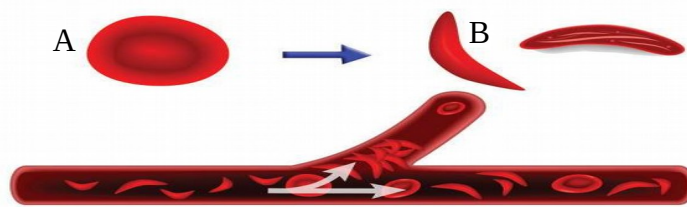
23. Redraw the diagram given below and answer the questions.



Thalamus, Controls heartbeat, Medulla oblongata,
 Cerebellum, Makes sensation, Cerebrum
 Coordinates muscular activities, Act as relay station of impulses

- a) Identify the words which are related to brain and label them.
- b) Make suitable word pairs of parts of brain and their functions given in the box.

24. Observe the illustration and answer the questions given below.



- a) Which disease is indicated by figure B?
- b) What change occurred in the structure of RBC?
- c) What is the reason for this disease?
- d) How does the deformity of RBC in sickle cell anaemia patients affect their body?