AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX

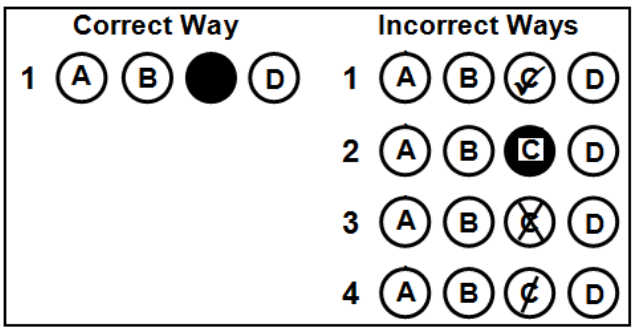
MODEL EXAMINATION PAPER 2023 AND ONWARDS

General Science Paper I

Time: 1 hour 5 minutes Marks: 35

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 35 only.
4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.



Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
7. You may use a simple calculator if you wish.

1. The given flowchart shows steps of the scientific method of study.

Which of the following CORRECTLY identifies steps **X** and **Y**?

	Step X	**Step Y**
A	Construction of hypothesis	Result
B	Construction of hypothesis	Theory
C	Procedure	Result
D	Procedure	Theory

2. Which of the following increases the amount of minerals in the soil?

A. Pesticides
B. Fertilisers
C. Fungicides
D. Insecticides

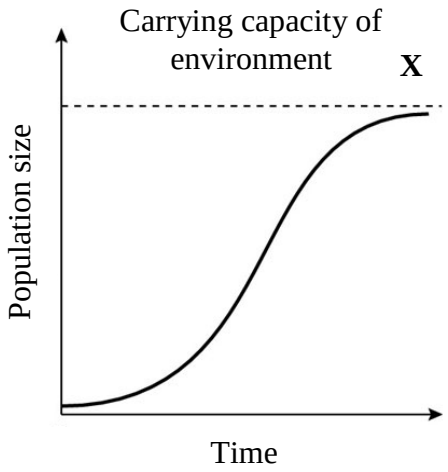
3. The branch of physics that analyses the different aspects and characteristics of land is

A. biophysics.
B. geophysics.
C. astrophysics.
D. microphysics.

4. The basic factor that determines the carrying capacity of a population is

A. a peaceful environment.
B. the supply of clean water.
C. the food supply and shelter.
D. an upgraded infrastructure and employment.

5. The given graph relates population size with time and also mentions the carrying capacity of its environment.



In the given graph, at point **X**, the population growth will

A. overshoot the carrying capacity.
B. slow down due to limited resources.
C. increase regardless of resource availability.
D. decrease regardless of resource availability.

6. The change in the number of individuals in a population per unit time is defined as

A. birth rate.
B. death rate.
C. carrying capacity.
D. population growth.

7. Read the given characteristics.

- Crystalline in nature
- Composed of 60 carbon atoms
- Formed in the shape of a hollow sphere

An allotrope of carbon that shows the given characteristics is

A. graphite.
B. charcoal.
C. diamond.
D. Buckyball.

8. The MAIN constituent of haemoglobin is

A. iron.
B. sodium.
C. potassium.
D. phosphorous.

9. A person experiences the following symptoms.

- Irregular heartbeat
- Tremors and seizures
- Fatigue and muscle weakness

All of the given symptoms occur due to the deficiency of

A. sodium.
B. chlorine.
C. magnesium.
D. phosphorous.

10. A process that requires oxygen is the

A. digestion of starch in animal gut.
B. movement of water in plant body.
C. formation of glucose in plant cells.
D. breakdown of glucose in animal cells.

11. Which of the following combinations of chemical elements are present in a carbohydrate molecule?

	Carbon	**Hydrogen**	**Oxygen**
A	No	Yes	Yes
B	Yes	No	Yes
C	Yes	Yes	No
D	Yes	Yes	Yes

12. An element which is used in making dyes for colour photography is

A. iodine.
B. sodium.
C. fluorine.
D. phosphorus.

13. A compound **X** makes almost 65% of the body weight and is required to carry out countless metabolic reactions in the human body.

The chemical structure of compound **X** is made up of

A. carbon and oxygen.
B. hydrogen and carbon.
C. oxygen and hydrogen.
D. carbon, hydrogen and oxygen.

14. Following activities takes place in all the living bodies.

- Oxygen is used
- Food is burnt
- Energy is released

The process in which the given activities take place is

A. respiration.
B. transpiration.
C. reproduction.
D photosynthesis.

15. A thalassemia care centre needs blood donation for patients with blood group A^+.

The people that may donate their blood at this centre must have blood groups

A. A^+, A^- only.
B. A^+, A^-, O^+, O^-.
C. AB^+, AB^- only.
D AB^+, AB^-, O^+, O^-.

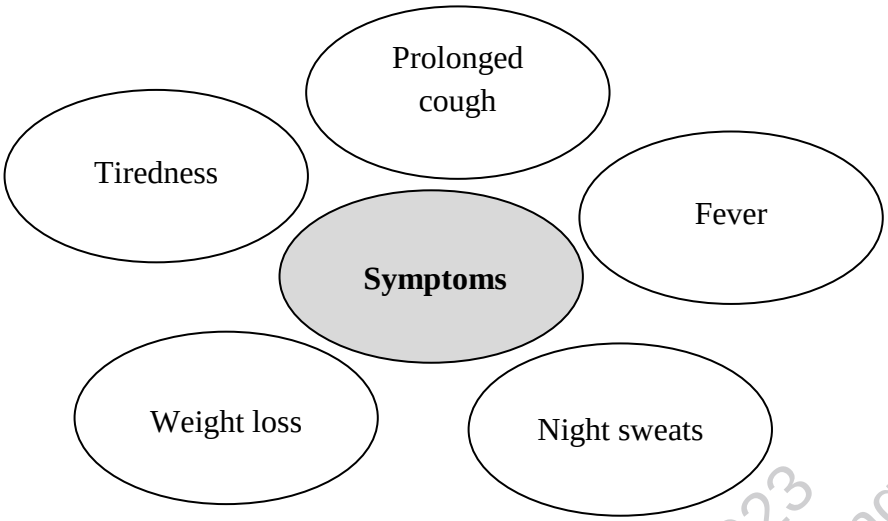
16. In a laboratory test it is reported that Ahmed has low levels of platelets in his blood. In this condition, the function that would be affected in Ahmed's body is

A. clotting of blood.
B. transport of gases.
C. production of antibodies.
D. transport of waste material.

17. Which of the following CORRECTLY describes antibiotics?

A. They produce antibodies.
B. They can kill the viruses.
C. They are produced from viruses.
D. They can treat fungal and bacterial infections.

18. Given are the symptoms of an infectious human disease.



Based on the given symptoms, the disease and its mode of transmission are identified as

	Disease	Mode of Transmission
A	diphtheria	air
B	diphtheria	water
C	tuberculosis	air
D	tuberculosis	water

19. A person visits a doctor with the following symptoms.

- Jerking movements of muscles
- Difficulty in swallowing food

The individual is MOST probably suffering from

A. tetanus.
B. typhoid.
C. diphtheria.
D. tuberculosis.

20. The preventive measure that is depicted in the diagram to control the spread of germs is

A. sterilisation.
B. immunisation.
C. extermination.
D. sewage disposal.

21. Ali has a very stressful lifestyle. He walks for 30 minutes daily and has quit smoking, but he still loves to take excessive salt and fruits in his diet.

In the given condition, which action of Ali may cause heart disease?

A. Quitting smoking
B. Excessive use of salt in diet
C. Walking for 30 minutes daily
D. Excessive intake of fruits in diet

22. Akram met an accident and got many cuts and scratches on his body. He was taken to the hospital where the doctors ran some tests. One of the tests showed that he has rabies. On inquiring it was found that a wild dog had bitten him a week ago.

In the given situation, the mode of transmission of rabies germs into Akram's body is

A. air.
B. touch.
C. animal.
D. cuts and scratches.

23. Photovoltaic energy is the conversion of sunlight into

A. biogas.
B. electricity.
C. thermal energy.
D. geothermal energy.

24. Which of the following is an example of potential energy?

A. A kite is flying in the air.
B. A football is rolling in the field.
C. A car is parked at the top of a hill.
D. A fox is chasing a mouse in the jungle.

25. Global atmospheric temperatures are likely to be increased due to

A. burning of fossil fuel.
B. migration of people.
C. water pollution.
D. soil erosion.

26. All of the following are the ways to conserve energy in transportation EXCEPT

A. using individual vehicles.
B. driving at moderate speed.
C. travelling through public transport.
D. using small and low consumption vehicles.

27. The quantity of heat required to raise the temperature of one gram of water by $1^{o}C$ is called

A. kilo watt.
B. calorie.
C. joule.
D. watt.

28. A ball falls from the top of a building to the ground in the presence of air.

Which of the following is CORRECT about the kinetic energy of the ball just before striking the ground and the potential energy of the ball at the top of the building?

A. Both energies become zero.
B. Kinetic energy is equal to potential energy.
C. Potential energy is greater than kinetic energy.
D. Kinetic energy is greater than potential energy.

29. An electronic component that stores and releases electricity in a circuit is known as a

A. fuse.
B. switch.
C. resistor.
D. capacitor.

30. In power transmission lines, alternating current (AC) is used instead of direct current (DC) because AC voltage can be

A. increased only.
B. decreased only.
C. increased and decreased both.
D. neither increased nor decreased.

31. A galvanometer can be converted into an ammeter by placing a

A. high resistance in series circuit.
B. small resistance in series circuit.
C. high resistance in parallel circuit.
D. small resistance in parallel circuit.

32. The electrical component that opposes the current in a circuit is the

A. resistor.
B. ammeter.
C. capacitor.
D. voltmeter.

33. When a direct current source is connected in an electric circuit, the current through it

A. changes its magnitude and direction.
B. does not change its direction and magnitude.
C. does not change its magnitude or its direction.
D. changes its magnitude but does not change its direction.

34. All of the following electrical devices can be connected in a series in an electrical circuit EXCEPT for a/ an

A. resistor.
B. battery.
C. ammeter.
D. voltmeter.

35. If electric current exceeds the limit in a circuit, then the electrical device that disconnects power supply is/ are

I. fuse
II. capacitor
III. circuit breaker

A. I only.
B. II only.
C. I and III.
D. II and III.

END OF PAPER

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