

SCIENCE

STRUCTURE AND SCHEME OF THE EXAMINATION

There will be two papers: Paper 1 and Paper 2 both of which must be taken. The two papers will be a composite paper to be taken at a sitting.

1. PAPER 1 (OBJECTIVE)

This will be objective paper made up of **40 questions** drawn from the entire syllabus. All the questions must be answered in **45 minutes**.

2. PAPER 2 (ESSAY)

This shall be an essay paper made of 2 sections. Section A and B to be answered in **1 hour 25 minutes**.

Section A: will be one compulsory question consisting of four sub questions testing in practical skills specified in Agriculture, Biology, Chemistry and Physics aspects of the examination syllabus. This will attract **40 marks**.

Section B: will consist of four questions. Each question shall be a blend of Agriculture, Biology, Chemistry and Physics aspects of the examination syllabus. Candidates will be required to answer any three of the question for **60 marks**.

3. WEIGHTING OF THE PAPER

| Paper | Items | Scaling factor | Total marks |
|------------------|--------------|-----------------------|--------------------|
| 1 (Objective) | 40 | 1.0 | 100 |
| 2 (Essay) | 4 | 0.6 | |

SAMPLE QUESTIONS**PAPER 1 (OBJECTIVES)**

1. The series of changes that occur during the development of a housefly is called
 - A. growth.
 - B. cycle.
 - C. reparation
 - D. metamorphosis

2. Compost is not an ideal choice for use as mulch because
 - A. It is unsanitary
 - B. it attracts squirrels, ants and other critters looking for food.
 - C. the nutrients are too concentrated and will kill the plants.
 - D. the nitrogen evaporates into the air instead of the soil.

3. In which part of the monogastric digestive system does microbial digestion takes place?
 - A. Large intestine
 - B. Rectum
 - C. Caecum
 - D. Oesophagus

4. Which of the following best describes why carbon cycle is said to be a repeated pattern in nature? (U)
 - A. It helps to maintain a balanced level of CO₂ in the earth's atmosphere.
 - B. It makes carbon dioxide available for plants to use for photosynthesis.
 - C. It involves carbon-sequestration process.
 - D. There is a continual exchange of carbon between the earth and the atmosphere

5. The **main** reason why hay making is less common in tropical Africa especially Ghana is because
 - A. the animals can forage all year round.
 - B. pastures contain abundant forage all year round.
 - C. grazing animals are only reared for ritual purposes.
 - D. grazing animals are reared under the intensive system

6. The grasshopper life cycle is said to be incomplete metamorphosis because the grasshopper
 - A. has both a caterpillar and nymph in its life cycle.
 - B. life cycle has five stages.
 - C. life cycle has two very different stages.
 - D. life cycle has only 3 stages; adult, nymph, and egg

7. A feeding relationship consists of different organisms including maize, dog and lion. Which trophic level is missing in the feeding relationship?
 - A. Primary consumer
 - B. Dominant producer
 - C. Secondary consumer
 - D. Tertiary consumer

8. The system of farming that is **most** likely to ensure harvest different types of crops at the end of the season is
 - A. mono-cropping
 - B. mixed farming
 - C. mixed cropping
 - D. irrigational farming

9. A patient who reports to the hospital with a gum related disease is most likely suffering from
 - A. periodontal disease
 - B. gingivitis
 - C. dental caries
 - D. gummosis

10. The part of the digestive system that **does not** contain digestive enzymes is the
 - A. duodenum
 - B. mouth
 - C. oesophagus
 - D. stomach

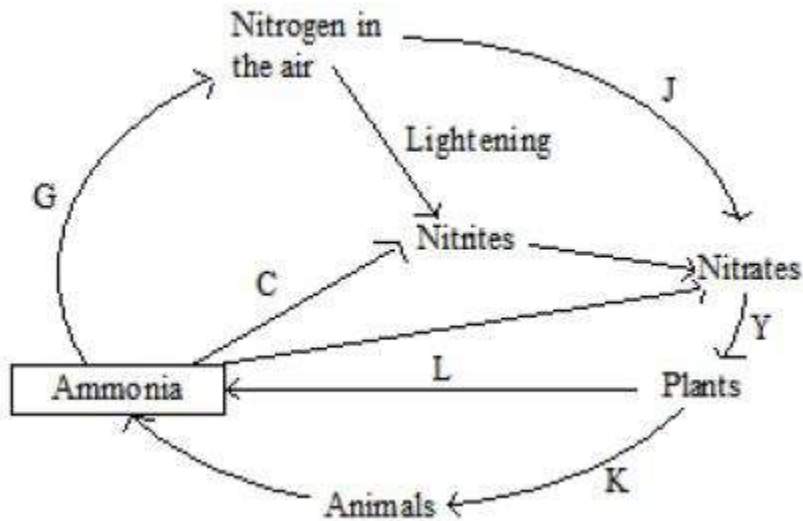
ESSAY

1. (a) State two conditions that makes the presence of life on Jupiter difficult. **(2 marks)**
- (b) Explain **two** steps involved in the preparation of manure. **(2 marks)**
- (c) State **two** diseases that affect the circulatory system of humans **(2 marks)**
- (d) Explain briefly why a community will not be encouraged to practice mixed cropping. **(3 marks)**
- (e) Briefly describe a test you will conduct to prove the presence of proteins in a piece of meat. (A) **(5 marks)**
- (f) Explain the term respiration (U) **(2 marks)**
- (g) Identify **three** human activities that are destroying the balance of ecosystems in Ghana. **(3 marks)**

2. (a) Distinguish between land rotation and crop rotation (U) **(2 marks)**
- (b) Explain what happens to a morsel of kenkey as it travels along the alimentary canal (A) **(4 marks)**
- (c) (i) Name **three** parts of the human circulatory system.
(i) Give **one** function of each part of the parts named in (i). **(6 marks) (K)**
- (d) Distinguish between an inner planet and an outer planet. (U) **(2 marks)**
- (e) Consider three different animals namely, lion, sparrow and tilapia
(i) Identify the type of ecosystem that each of these organisms live in (U)
(ii) Write down one feature/adaptation that enables each of the organisms to live successfully in the ecosystem in (i) above. (A) **(6 marks)**

TEST OF PRACTICALS

1. The diagram below shows various ways in which Nitrogen is cycled in nature, study it carefully and answer the question that follows;



- Identify the stages **labelled** C, G, J, K, L and Y
- Describe the processes labelled G and Y
- Explain how certain plants fix nitrogen in the soil
- State two importance of the cycle to the environment.

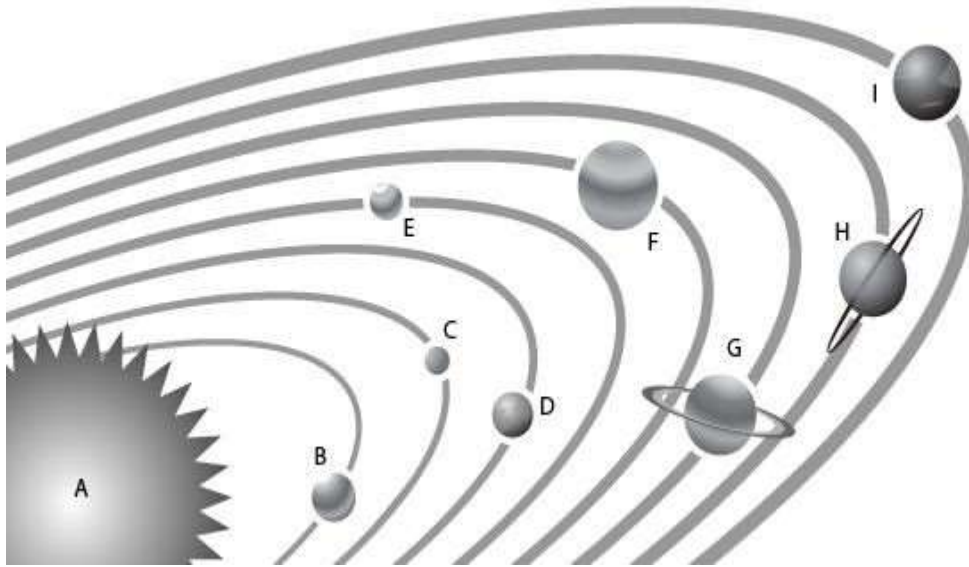
[6 Marks]

[4 Marks]

[2 Marks]

[2 Marks]

2. The picture below shows parts of the solar system. Study it carefully and use it to answer the questions that follow



- Name the parts labelled A, B, C, D, E, F, G, H, and I
- Which of the parts named is known as the twin of the earth?
- Group the objects A, B, C, D, E, F, G, H, and I into inner planet and outer planet.
- Which of the labelled parts supports life?
- Give **two** reasons why the part named in (d) supports life.
- Give one difference between the parts labelled B and A