For Performance Measurement

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

CROP SCIENCE 6049/1

PAPER 1 Multiple Choice

SPECIMEN PAPER 1 hour

Additional materials:
Multiple Choice answer sheet,
Soft clean eraser,
Soft pencil (type B or HB is recommended),
Scientific calculator.

TIME 1 hour

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.
Write your name, Centre number and candidate number on the answer sheet in the spaces provided unless this has already been done for you.

There are **forty** questions in this paper. Answer **all** questions. For each question there are **four** possible answers, **A**, **B**, **C** and **D**. Choose the **one** you consider correct and record your choice in **soft pencil** on the separate answer sheet.

Read very carefully the instructions on the answer sheet.

INFORMATION FOR CANDIDATES

Each correct answer will score one mark.

Any rough working should be done in this booklet.

This specimen paper consists of 8 printed pages.

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[Turn over

1 Which class represents the development form and structure of plants?

A Scientific
B Morphology
C Habitat
D Use

2 In which part of the flower does meiosis occur?

A Filament
B Anthers
C Stigma
D Style

3 What is the site of protein synthesis?

A Mitochondria
B Ribosomes
C Cytoplasm
D Lysosomes

4 Which organic matter decompose faster when they have the following C/N ratios?

	Plant	**C:N Ratio**
A	Maize	200:4
B	Groundnuts	32:4
C	Soyabean	22:2
D	Wheat	80:2

5 The smallest size of meso-organism is

A <0.02 mm
B 0.2 mm
C 11 mm
D >0.02 mm

6 At which stage of pollen grain formation is the anther culture possible?

A Microsporocyte
B Diploid cells
C Immature microscope
D Haploid mature cell

7 The first stage in seed germination process is

A increased metabolic activity
B swelling of cells
C imbibition
D cellular respiration

8 Which of the following factors expose the crop to noxious substances during weed crop competitions?

A Habour pests
B Reduce yield
C Allelopathy
D Grain contamination

9 Some pests undergo three stages in their life cycle, this is referred to as

A double metamorphosis
B triple metamorphosis
C incomplete metamorphosis
D complete metamorphosis

10 Which of the following is an example of hydrous mica?

A Montmorillonite
B Illite
C Kaolinite
D Chlorite

11 Which of the following statements applies to scarification?

A Immersing seed into a weak acid.
B Subjecting seed to low temperature.
C Immersing seed in cold water.
D Subjecting seed to moist conditions.

12 A compound which is found in all living cells and plays a key role in energy transformation is

A adenosine diphosphate (ADP).
B adenosine monophosphate (AMP).
C adenosine triphosphate (ATP).
D adenosine.

13 The growth regulator which facilitates cytokinesis is

A auxin
B ethylene
C gibberelins
D abscisic

14 Which of the following is a physiological effect of ethylene on plants?

A Delays ripening of fruits.
B Leaf and flower abscission.
C Promotes cell division and differentiation.
D Stomatal closure.

15 Select the statement that explains ribonucleic acid (RNA) interference.

A RNA is double stranded.
B RNA targets mRNA not to produce protein.
C RNA allows for production of protein.
D RNA does not target the breakdown of mRNA.

16 The organisation of photosynthetic pigment into clusters is

A photosynthesis.
B photosynthetic cluster.
C cluster arrangement.
D photosystems.

17 The second group of pigments involved in photosynthesis besides chlorophyll is

A carotenes
B xanthophylls
C carotenoids
D phytochrome.

18 Which condition is favourable for C_3 plants?

A Moderate sunlight intensity.
B Very high sunlight intensity.
C Very low sunlight intensity.
D Water logged conditions.

19 Which weed control method is most environmentally friendly?

A Cultural control
B Chemical control
C Biological control
D Integrated weed control

20 Pest control measures should be adopted when pest numbers are at

A above threshold level.
B below threshold level.
C above economic level.
D equilibrium position.

21 Which organelle does **not** produce ribosomes?

A Mitochondria
B Nucleus
C Chroroplast
D Vacuole

22 Nitrogen depression is a period when there is

A lack of nitrogen for use by micro-organism in the soil.
B sufficient nitrogen in the soil.
C nitrogen locked up in micro-organisms.
D sufficient nitrogen for both micro-organisms and plants in the soil.

23 Select appropriate methods of quantifying fixed nitrogen by legume in the soil.

A Neutron probe, ureide method.
B Ureide method, nodule evaluation.
C Biological assay, nodule evaluation.
D Ureide method, biological assay.

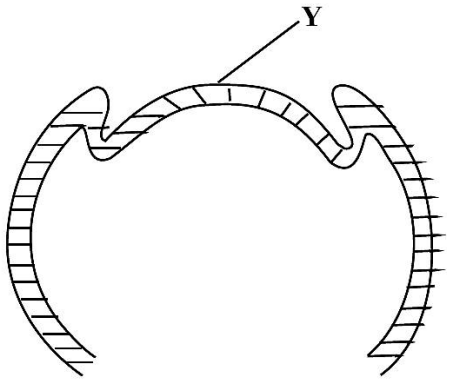
24 Double fertilisation in plants leads to two structures found in the seed namely

A radicle and endosperm.
B embryo and radical.
C embryo and endosperm.
D plamule and endosperm.

25 What are the roles of phytates in germination of seeds?

A Contains oxidative enzymes.
B Storage of complex macromolecules.
C Storage of simple micromolecules.
D Microstorage form of inorganic phosphates in mature grain and leaves.

26 The diagram shows an apical meristem.



Name the part labelled Y .

A Leaf primordial
B Tunica
C Corpus
D Longitudinal plane

27 Which is the most destructive stage of stalk borer in crops?

A Adult
B Eggs
C Larvae
D Pupa

28 Herbicide residual effect is mostly caused by

A nature of weeds controlled.
B the high active ingredient of herbicides.
C the potential affinity for residual effect by colloid particles.
D leaching level of herbicides into soil and water bodies.

29 Select two major factors used to divide Zimbabwe into agroecological zones.

A Rainfall and humidity.
B Rainfall and wind.
C Humidity and wind.
D Rainfall and temperature.

30 When anthers mature before stigma it is referred to as,

A prophylaxy
B protandry
C protogyny
D protony

31 Conservation farming practised in water logged areas involve

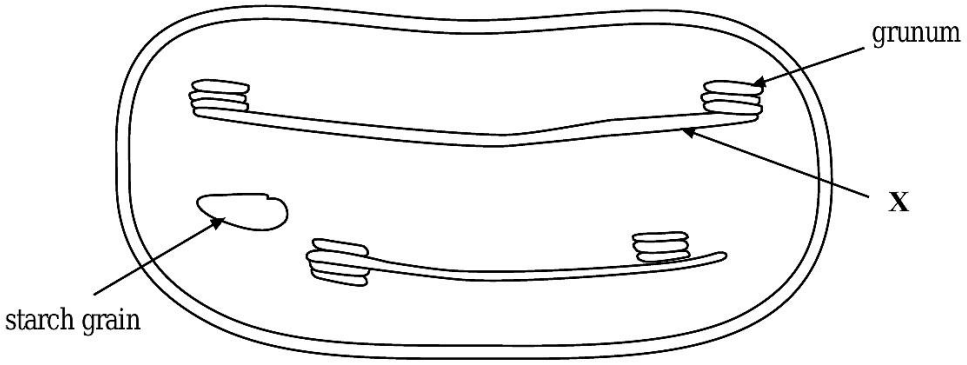
A contour ploughing.
B terrace farming.
C application of organic matter.
D installing drainage pipes.

32 A.T.P is regarded as the universal energy carrier and this implies that it is found in

A all living cells.
B all reactions in plants.
C higher plants.
D the mitochondria.

33 The diagram below shows an organelle in which photosynthesis takes place.

What is labelled X on the diagram?



A Stroma
B Lipids
C D.N.A
D Lamella

34 Why do clay soils require large amounts of lime than sandy for the same pH correction?

A The silicate in sand has lower neutralising value.
B Sandy soil has a larger buffering capacity.
C Clay has more intra-aggregate pores.
D Clay has more exchange sites than sandy soils.

35 If the bulk density of a soil sample is **1 000kg m^{-3}** and the particle density is **2 060kg m^{-3}**. What is the porosity of the soil expressed as a percentage?

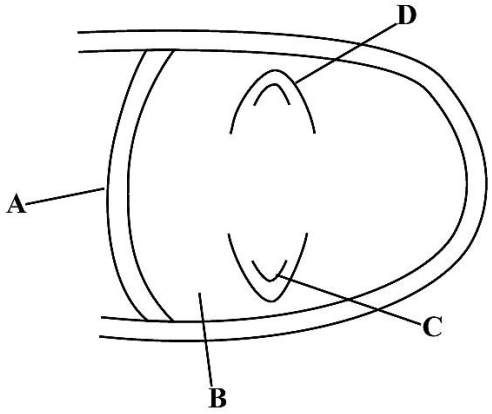
A 51.45
B 10.60
C 50.00
D 48.50

36 What is the calcium carbonate equivalent of pure magnesium oxide if the molecular weights are as follows:

Magnesium	=	24
Oxygen	=	16
Carbon	=	12
Calcium	=	40

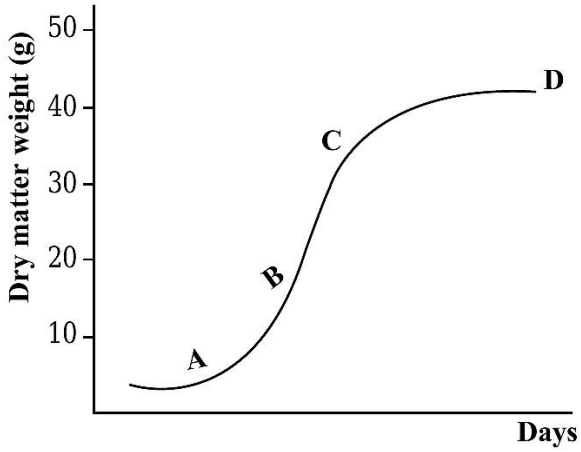
A 135%
B 100%
C 119%
D 250%

37 The diagram below illustrates the longitudinal section of a cereal grain.



Which part is the scutellum?

38 The graph below represents changes in dry matter accumulation during growth of a flowering plant.



Which letter on the graph indicates where synthesis of food stored in the endosperm begins?

39 Why is it necessary to use a sticker solution during inoculation?

A To concentrate inoculants on the seed.
B To increase seed-soil contact.
C To bind soil particles together.
D To improve germination.

40 A soil requires **150kg/ha** of nitrogen of which **20%** of the nitrogen is supplied by Biological Nitrogen Fixation (BNF). Calculate the amount of nitrogen required from the fertilisers to meet the application rate.

A 180 kg
B 150 kg
C 120 kg
D 100 kg