



ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
General Certificate of Education Advanced Level

HORTICULTURE

PAPER 1 Multiple Choice

6024/1

SPECIMEN PAPER

1 hour

Additional Materials:

- Multiple Choice answer sheet,
- Soft pencil (type B or HB is recommended),
- Soft clean eraser,
- Scientific Calculator.

TIME 1 hour

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so by the invigilator.

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 question paper consists of 10 printed pages and 2 blank pages.

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- 1 Horticulture is well suited to which kind of environment?
- A Humid tropical forests
 - B Hot pine forest regions
 - C Cool pine forest regions
 - D Warm, humid tropical forests
- 2 Which of the following organelles manufactures Adenosine Triphosphate (ATP)?
- A Chloroplasts
 - B Nucleus
 - C Mitochondria
 - D Lysosomes
- 3 _____ arises due to salts in solution that lower the free energy of water.
- A Matric potential
 - B Osmotic potential
 - C Overburden potential
 - D Gravitational potential
- 4 Matric potential results from the following phenomenon
- A adhesion and cohesion.
 - B osmotic and adsorption.
 - C capillarity and adhesion.
 - D capillarity and cohesion.
- 5 Which is the site of glycolysis?
- A Mitochondria
 - B Cytoplasm
 - C Golgi apparatus
 - D Endoplasmic reticulum
- 6 Which one is **not** a C A M plant?
- A Aloe vera
 - B Prickle pear
 - C Cactic
 - D Corm
- 7 The Kreb cycle occurs in the
- A Mitochondria.
 - B Cytoplasm.
 - C Golgi apparatus.
 - D Endoplasmic reticulum.

- 8 Which one is **not** a method of breaking seed dormancy?
- A Cloning
B Scarification
C Stratification
D Addition of hot water
- 9 The first stable product of the C_3 pathway is a carbon compound called
- A phosphoglycerate.
B pyruvate.
C oxaloacetate.
D malate.
- 10 What is the function of molecular oxygen in cellular respiration?
- A To combine with carbon to produce carbon dioxide
B To combine with glucose to produce carbon dioxide
C To combine with hydrogen to produce water
D To oxidise ADP to ATP
- 11 A perfect flower has
- A both stamen and pistil.
B both pistil and sepals.
C only petal.
D only stamen.
- 12 Which one is a biological method of controlling weeds?
- A Mulching
B Crop rotation
C Selective crop stimulation
D Use of a bioagent
- 13 Which of the following describe the effects of compaction on soil?

	Porosity	Bulk density
A	increase	low
B	decrease	low
C	increase	high
D	decrease	high

- 14 The ability of a soil structure to resist collapse when saturated with water is known as
- A vulnerability.
 - B porosity.
 - C stability.
 - D bulk density.
- 15 What drainage conditions are associated with red subsoils soils?
- A Excellent.
 - B Good.
 - C Moderate.
 - D Poor.
- 16 Cation Exchange Capacity (CEC) is defined as the sum of all exchangeable
- A cations.
 - B basic cations.
 - C acidic cations.
 - D basic and acidic cations.
- 17 Which of the following insect pest has mandibles?
- A Beetles
 - B Thrips
 - C Aphids
 - D Bugs
- 18 Beading and droplets of water on flowers indicate
- A high temperature.
 - B high humidity.
 - C low temperature.
 - D low humidity.
- 19 Which of the following is **not** a subtropical fruit?
- A Citrus
 - B Granadilla
 - C Grapes
 - D Apples
- 20 Which of the following is **not** a cause of post harvest losses of horticultural products?
- A Low temperature and high atmospheric humidity
 - B Improper handling during harvesting
 - C High temperature and low humidity
 - D Disease and pest

- 21 Secondary growth in both roots and stems results in
- A production of xylem and phloem vessels.
 - B rapid increase in root and stem length.
 - C development of vascular and cork cambium.
 - D production of parenchyma cells only.
- 22 A cross-section of a root shows central star-shaped mass of xylem when the plant is a
- A dicot.
 - B monocot.
 - C biennial.
 - D perennial.
- 23 Which statement explains why C_3 plants are not photosynthetically efficient under light conditions?
- A Stomata close and oxygen reacts with ribulose biphosphate
 - B Stomata open and carbon-dioxide reacts with ribulose biphosphate
 - C Stomata close and oxygen reacts with phosphoglyceric acid
 - D Stomata open and oxygen reacts with glyceraldehyde 3-phosphate
- 24 Which of the following is a hydrogen acceptor in a non cyclic photophosphorylation?
- A ADP
 - B NAD
 - C NADP
 - D RuBP
- 25 What is the primary structural differences between roots and stems?
- A Arrangement of vascular tissues within the stem and root
 - B Arrangement of pith within the stem and root
 - C Differences in xylem and phloem function
 - D Differences in the number of stomata
- 26 Which soil structure has caps on the surface and pans in the soil?
- A Prismatic
 - B Angular blocky
 - C Platy
 - D Crumb

27 What is the effect of low pH on clay particles with high concentration of nutrients?

- A** Flocculation of clay particles leading to adsorption of cations
- B** Disintegration of clay minerals leading to leaching
- C** Displacement of hydrogen ions to adsorption of cations
- D** Precipitation of hydrogen ions leading to toxic effects

28 What distinguishes sprinkler irrigation from drip irrigation?

	Sprinkler irrigation	Drip irrigation
A	Water under high pressure	Water under low pressure
B	Water under low pressure	Water under high pressure
C	High erosion	High erosion
D	Low erosion	High erosion

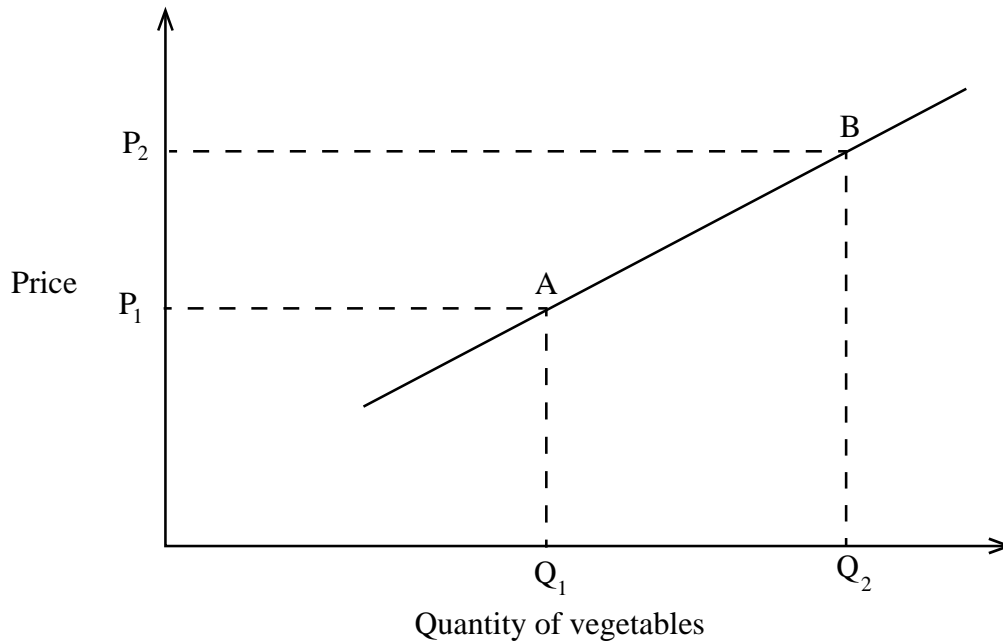
29 Why do clay soils require large amounts of lime than sandy soils to produce the same pH change?

- A** The silicate in sand has a lower neutralising value.
- B** Sand soil has a large buffering capacity
- C** Clay has more intra – aggregate pores
- D** Clay has more exchange sites

30 Which physical property of the soil is reduced by adding organic fertilizer?

- A** Porosity
- B** Aggregation
- C** Bulk density
- D** Particle density

- 31 The diagram below shows a supply curve of vegetables.

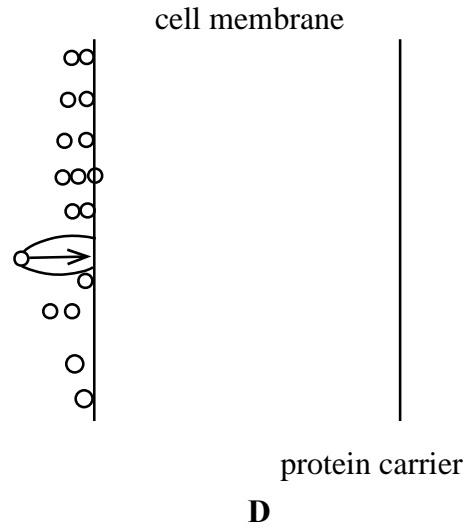
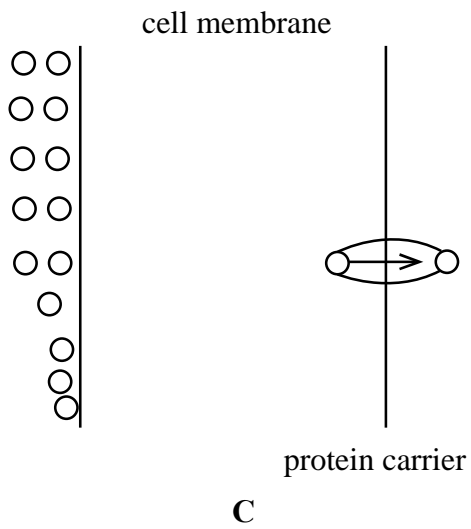
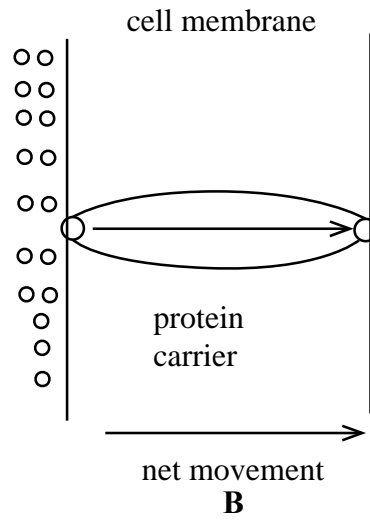
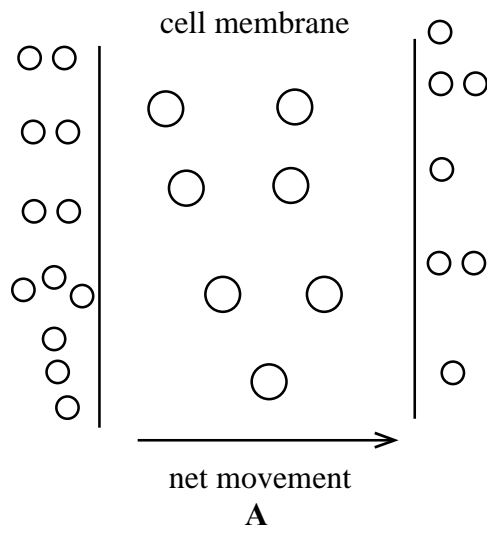


Which factor causes the shift in supply of the vegetables from A to B?

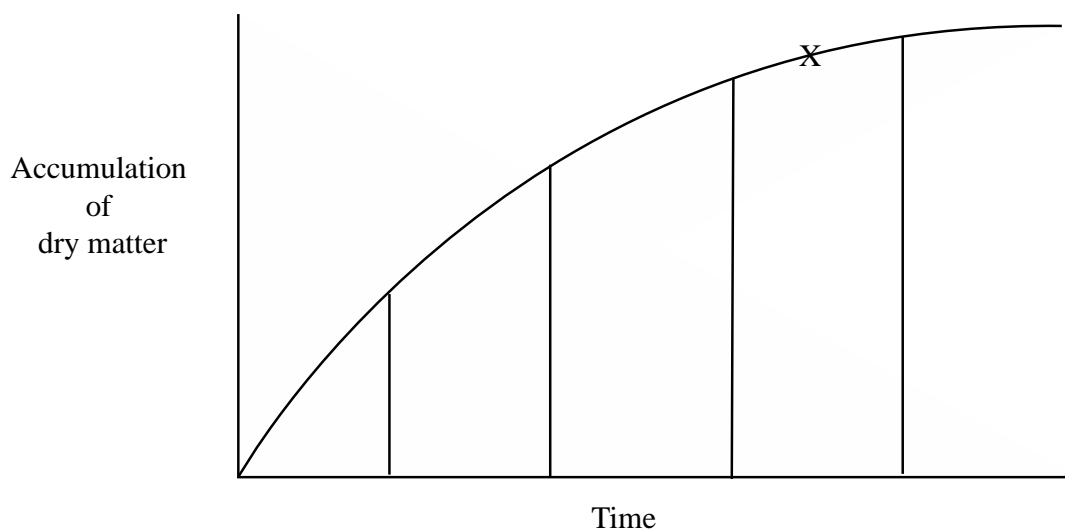
- A Increase in market price
 - B Improvement in technology
 - C Increase in population
 - D Increase in income
- 32 Identify a problem associated with graft incompatibility.

- A Mature defoliation
- B General good health
- C Non degeneration of tissues at graft union
- D Complete failure to form a graft union

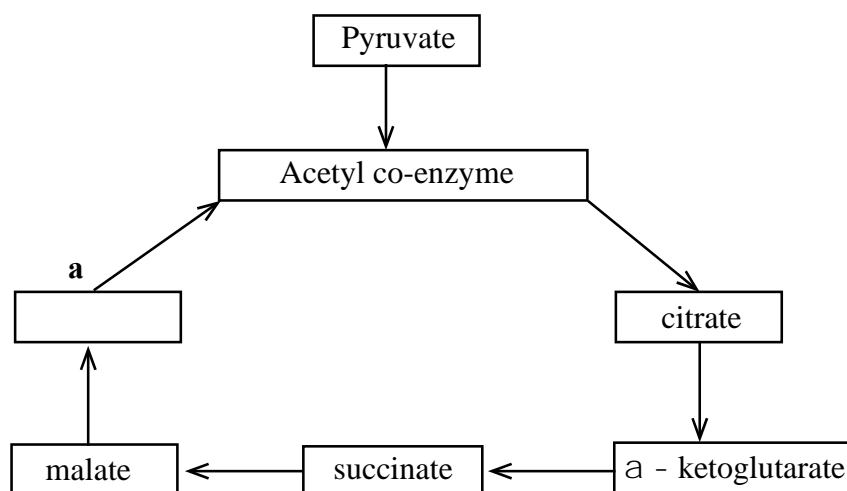
33 Which one of the following diagrams show facilitated diffusion?



- 34 What is the reason why point **X** on the graph is the best time to collect root cuttings.



- A** Good protein reserves
B Good carbohydrate reserves
C Good fat reserves
D Good mineral reserves
- 35 The diagram below shows part of the Krebs's cycle.



What name is given to substances labelled **a**?

- A** Rubisco
B Aspartate
C Citrate
D Oxaloacetate

- 36 The transition from vegetative growth to flowering in long- day or cold requiring plants can be promoted by application of
- A auxin.
 - B abscisic acid.
 - C gibberellic acid.
 - D cytokinins.
- 37 How does the addition of agricultural lime assist in the availability of soil nutrients?
- A H^+ adsorbed K^+ set free
 - B Ca^{2+} adsorbed, K^+ and Mg^{2+} set free
 - C H^+ adsorbed, PO_4^- set free
 - D K^+ adsorbed, Mg^{2+} set free
- 38 What would a maggot grow up to be when it moults into an adult?
- A Fly
 - B Earwig
 - C Louse
 - D Grasshopper
- 39 What should be considered when marketing horticultural products?
- A Handling, storage, products, consumers, markets
 - B Perishability, distribution, products, consumers, handling
 - C Markets, products, storage, consumers, handling
 - D Packaging, storage, transportation, financing, distribution
- 40 _____ require more lime to raise its pH.
- A Sandy soil with low organic matter
 - B Sandy loam with high organic matter
 - C Clay soil with low organic matter
 - D Clay soil with high organic matter

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