

Plus One | Serious Revision

Science and Technology



Grade
7



Plus One | Serious Revision

Science and Technology

Revision Guide
(With answers)

Grade
7



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(With answers)**

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Introduction

How to use this Revision Guide

This PlusOne Science and Technology Revision Guide is strategically designed to help you master the Heritage Based Curriculum (HBC) Science and Technology Junior Syllabus objectives through a structured, step-by-step revision process. To ensure total syllabus coverage, the practice exercises are organised into two phases:

Phase 1: Topic mastery (Topic notes and End of topic examination practices 1–8): Eight dedicated examination practices, focusing on specific topics to build a solid foundation. These are followed by sample school based projects for each topic.

Phase 2: Combined revision (Practice 1-12): Integrated questions covering all content from Topics 1-8 across Grades 3 to 7 to prepare you for the final examinations. These are typical Zimsec examination questions, set following the Heritage Based Curriculum (HBC) specimen papers.

Exam alignment

The content of this guide is strictly syllabus-based to ensure you learn exactly what is required by the Heritage Based Curriculum. We have prioritised syllabus depth to prepare you for School Based Continuous Assessment (SBCA) and ZIMSEC Summative Assessment (SA).

About the subject

Science and Technology is a learning area that fosters growth and development by encouraging exploration and creativity. Through this subject, learners will:

- demonstrate an understanding of scientific and technological concepts.
- apply indigenous knowledge systems and heritage-based knowledge to solve real-life problems.
- analyse scientific data and communicate information logically.
- use scientific instruments and apparatus effectively.
- evaluate hands-on skills through experimentation.

Paper 1

Paper 1 is a **Summative Assessment** component consisting of multiple-choice questions.

- **Format:** 40 Multiple choice questions.
- **Duration:** 1 hour 45 minutes.
- **Weighting:** Contributes 50% to the final summative mark.
- **Requirement:** Candidates are expected to answer all questions.
- **Skill focus:** Knowledge and comprehension (40%), Application and analysis (40%) and Problem solving (20%).

Paper 2

Paper 2 is a summative structured and semi-structured written paper.

- **Duration:** 1 hour 30 minutes.
- **Weighting:** Contributes 50% to the final summative mark.
- **Section A:** 6 compulsory structured questions (30 marks).
- **Section B:** 6 semi-structured questions; candidates choose and answer 4 questions (20 marks).

School Based Projects

To succeed in the Continuous Assessment (20%) component, learners must follow the project execution stages carefully:

- a Problem identification (January):** Clearly define the issue.
- b Investigation (February):** Research related ideas and innovations.
- c Generation of solutions (March):** Brainstorm possible answers.
- d Selection (April-May):** Choose the most suitable solution.
- e Refinement (June):** Improve the selected solution.
- f Presentation (July):** Present the final solution.
- g Evaluation (August-September):** Review the solution and make recommendations.

Use of Information and Communication Technologies (ICTs)

In line with educational technology and innovation, you are encouraged to:

- use scientific instruments and operation techniques,
- apply technological concepts to innovate and solve problems,
- present scientific phenomena using various data presentation methods.

Role of the facilitator

The facilitator supports the learning environment by ensuring assessment is guided by principles of inclusivity, authenticity and transparency. Key responsibilities include:

- implementing School Based Continuous Assessment (SBCA), which accounts for 20% of the final mark.
- managing learner profiling to track prior knowledge, values, skills and new competencies.
- providing accommodations and modifications for learners with special needs.

Suggested assessment tools

- Checklists and observation schedules.
- Tests and exercises.
- Rating scales and practical activities.
- School based projects.

Examination tips

To do well in Science and Technology summative examinations, you should follow these important guidelines:

a Start revising early

- Begin your revision well before the examination period. Early revision reduces stress and helps you understand concepts more clearly.
- It gives enough time to:
 - understand difficult topics such as energy, robotics, or plant and animal systems,
 - ask your teacher questions about experiments, diagrams, or formulas,
 - strengthen weak areas, like ICT applications or scientific processes.
- Revising early helps information stay longer in memory.
- Avoid last-minute rush, which often leads to confusion.

b Use a study timetable

- A study timetable is a plan that shows what to study and when.
- It helps you:
 - manage time effectively.
 - cover all Science and Technology topics before the exams.
- A good timetable should:
 - allow breaks for rest,
 - balance study with other subjects.
- Following a timetable builds discipline and confidence.

c Understand key command words

- Understanding command words helps you know exactly what the examiner wants. Missing the meaning may lead to losing marks even if your answer is correct.
- Common Science and Technology command words include the following, together with **what**, **where**, **why**, **when** and **how**:
 - **Define:** give the meaning of a scientific or technical term.
 - **State:** give short, direct answers.
 - **Identify:** name or list items such as parts of the respiratory system or energy sources.
 - **Explain:** give reasons or details, for example, why energy is conserved.
 - **Describe:** give a detailed account, such as a diagram or experiment.
 - **Discuss:** explain with examples or show advantages and disadvantages.
 - **Draw:** create accurate diagrams, label parts correctly.

d Read each question carefully

- Read every question at least twice before answering.
- Look for keywords, instruction words and the number of points required.

- Avoid rushing and misinterpreting diagrams, formulas or experimental instructions.
- Make sure you answer exactly what is asked, not what you think is asked.

e Answer according to the marks given

- Marks show how much detail is required. For example, 1 mark = one short point.
- Use numbered answers for clarity.
- Do not write too little or too much.

f Write clearly and neatly

- Neat handwriting helps the examiner read your answers easily. Poor handwriting may lead to misinterpretation of scientific terms or units.
- Avoid crossing out excessively.
- Use paragraphs, bullet points or labelled diagrams where appropriate.
- Always use a blue or black pen as instructed.

g Manage time well

- Allocate your time according to the number of questions and marks.
- Do not be too long on one question, such as a long experiment or diagram question.
- Answer easier questions first to build confidence.
- Leave time at the end to review diagrams, labels and calculations.
- Proper time management ensures all questions are attempted.

h Practise past examination papers

- Practising past papers helps you:
 - understand question patterns, including diagrams and experiments.
 - improve speed and accuracy, especially with calculations and labelling.
 - gain confidence in handling both theory and practical questions.
- Familiarise yourself with:
 - ZIMSEC Science and Technology question styles.
 - marking expectations, including labelled diagrams, units and technical terms.
- Always review your answers and learn from mistakes.

i Final advice

- Attend lessons regularly.
- Ask questions when you do not understand scientific concepts, experiments, or ICT tasks.
- Revise consistently using diagrams, charts and practice questions.
- Believe in your ability to succeed in Science and Technology examinations.

Internal body parts and their functions

1 Teeth

Types of teeth

- **Incisors:** Front teeth used for cutting food into smaller pieces.
- **Canines:** Sharp teeth used for tearing food.
- **Premolars and Molars:** Flat teeth used for grinding and crushing food.

Functions

- Help in breaking down food for digestion.
- Support speech and pronunciation.
- Protect the mouth and shape the face.

2 Stomach

- A muscular organ that stores food after eating.
- It produces acids and enzymes that break down food into smaller molecules.
- The stomach mixes food with digestive juices through churning.
- It controls the release of partially digested food into the intestines.

3 Lungs

- Main organs for breathing.
- They allow oxygen to enter the blood and carbon dioxide to leave the body.
- Lungs are made of soft tissue and contain tiny air sacs called alveoli.
- The lungs expand and contract with every breath.

4 Heart

- A muscular organ that pumps blood throughout the body.
- It ensures oxygen and nutrients reach all body cells.
- The heart also removes waste products like carbon dioxide.
- It keeps the body alive by maintaining circulation.

Dental health

Importance of oral hygiene

- Prevents tooth decay and cavities.
- Reduces risk of gum disease (gingivitis).
- Prevents bad breath.
- Helps maintain healthy teeth for eating and speaking.

Healthy dental habits

- Brush teeth twice daily.
- Rinse mouth after meals.
- Use dental floss to remove food stuck between teeth.
- Avoid sugary foods, fizzy drinks and sweets.

Digestive system

Major parts

- **Mouth:** Contains the teeth that chew the food and mixes it with saliva.
- **Oesophagus (Gullet):** A tube that carries food from the mouth to the stomach.
- **Stomach:** Mixes food with digestive juices.
- **Small intestine:** Absorbs nutrients into the blood.
- **Large intestine:** Absorbs water and forms solid waste.
- **Anus:** Removes waste from the body.

Functions of digestion

- Breaks down food into nutrients.
- Nutrients are absorbed into the bloodstream.
- Waste products are removed from the body.
- Ensures energy is available for growth and other activities.

Reproductive system

Male reproductive system

- **Testes:** Produce sperm and male hormones.
- **Penis:** Releases sperm during copulation.

Female reproductive system

- **Ovaries:** Produce eggs and female hormones.
- **Fallopian tubes (Oviduct):** Site of fertilisation and passage of fertilised and unfertilised egg to the uterus.
- **Uterus:** Where a baby grows during pregnancy.
- **Vagina:** Birth canal and passage for menstrual flow.

Immunisation

Common vaccines against:

- Polio
- Measles
- TB
- Diphtheria
- Whooping cough.
- Tetanus

Importance

- Prevents serious diseases.
- Helps children grow healthy.
- Protects the whole community.

Sexually Transmitted Infections (STIs)

Signs and symptoms

- Pain when urinating.
- Unusual discharge.
- Sores or blisters on reproductive organs.
- Itching and swelling.

Prevention

- Abstinence.
- Being faithful to one partner.
- Using protection during sexual intercourse, for example, condoms.
- Regular medical checkups.

HIV and AIDS

Transmission

- Unprotected sex.
- Sharing sharp objects.
- Mother-to-child transmission.

Prevention

- Use protection such as condoms.
- Avoid sharing sharp objects like needles and razor blades.
- Testing and counselling.

Management

- Antiretroviral therapy (ART).
- Balanced diet and healthy lifestyle.
- Regular checkups and support.

Chronic diseases

Examples

- Tuberculosis
- Hypertension
- Cancer
- Kidney failure.
- Diabetes

Causes

- Poor diet, lack of exercise.
- Smoking and taking alcohol.
- Family history and genetics.

Prevention

- Healthy eating and exercise.
- Regular medical checkups.
- Avoid smoking and taking alcohol.

Epidemic diseases

Definition

Diseases that spread quickly among many people.

Examples

- Cholera
- Measles
- Influenza
- Covid

Causes

- Poor sanitation.
- Contaminated water and food.
- Close contact with infected people.

Prevention

- Vaccination
- Good hygiene.
- Proper waste disposal.
- Early treatment and isolation.

**END OF TOPIC 1
EXAMINATION**

SCIENCE AND TECHNOLOGY

7150/1

PAPER 1

TIME: 1 HOUR 45 MINUTES

INSTRUCTIONS TO CANDIDATES

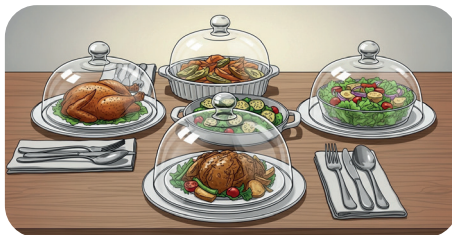
- When you are told to start choose **one** correct answer from suggested answers.
- Answer **all** the questions on the separate answer sheet.

1. Which part of the respiratory system filters, warms and moistens air as it enters the body?
A. Trachea **B.** Lungs **C.** Nose **D.** Diaphragm
2. Which front teeth are specifically for cutting food into smaller pieces?
A. Incisors **B.** Canines **C.** Molars **D.** Premolars
3. The main function of the organ shown is to _____.



- A.** pump blood throughout the body **B.** store oxygen
- C.** digest nutrients **D.** exchange gases
4. The muscular organ that stores food and mixes it with digestive juices is the _____.
A. oesophagus **B.** large intestine **C.** liver **D.** stomach
5. In which part of the female reproductive system does a baby grow during pregnancy?
A. Uterus **B.** Vagina
- C.** Ovaries **D.** Fallopian tubes.
6. The physical change where girls develop breasts occurs during _____.
A. early childhood **B.** puberty **C.** infancy **D.** old age
7. Tiny blood vessels where oxygen and nutrients pass to the body's cells are _____.
A. capillaries **B.** ventricles **C.** arteries **D.** veins

19. Proper waste disposal helps to reduce _____.
 A. land pollution B. noise pollution C. hearing loss D. exercise levels
20. A disease that spreads very quickly among many people is called a/an _____.
 A. chronic disease B. epidemic disease C. corona virus D. mental illness
21. Sharp teeth used specifically for tearing food are _____.
 A. molars B. canines C. incisors D. premolars
22. The organ that allows oxygen to enter the blood and carbon dioxide to leave is the _____.
 A. stomach B. heart C. lung D. kidney
23. Which habit helps prevent tooth decay and gum disease?
 A. Avoiding the dentist. B. Drinking fizzy drinks.
 C. Brushing teeth twice daily. D. Eating sweets daily.
24. The tube that carries food from the mouth to the stomach is the _____.
 A. oesophagus B. fallopian tube
 B. vas deferens C. trachea
25. In the male reproductive system, sperm is produced in the _____.
 A. ovaries B. testes C. penis D. uterus
26. Which muscle helps the body to breathe by expanding and contracting?
 A. Heart B. Diaphragm C. Bicep D. Stomach
27. Arteries are blood vessels that carry blood _____.
 A. only to the brain B. away from the heart
 C. only to the skin D. back to the heart
28. The practice shown in the diagram below is essential for _____.



- A. noise reduction B. air purification
 C. land value D. food hygiene
29. Botulism and *E. coli* infection are caused by _____.
 A. loud music
 B. lack of sleep
 C. breathing smoke
 D. eating contaminated food
30. Repeated eating followed by vomiting is a sign of _____.
 A. anorexia B. bulimia C. obesity D. diabetes

31. Waste from schools, markets and factories can cause _____.
A. environmental pollution B. improved health
C. clearer water D. better soil
32. Carbon monoxide and dust particles are examples of _____.
A. water pollutants B. air pollutants
C. food nutrients D. healthy gases
33. Dumping chemicals and sewage into rivers leads to _____.
A. noise pollution B. water pollution
C. land conservation D. air safety
34. Soil becomes infertile and loses its value due to _____.
A. recycling plastics B. planting trees
C. composting D. land pollution
35. Managing stress and staying positive are signs of good _____.
A. mental health B. physical health
C. dental health D. financial health
36. Bilharzia is a disease caused by _____.
A. loud machinery B. eating too much sugar
C. drinking or contact with dirty water D. polluted air
37. A sign or symptom of a Sexually Transmitted Infection (STI) is _____.
A. stronger muscles B. deep sleep
C. improved vision D. pain when urinating
38. Antiretroviral therapy (ART) is used in the management of _____.
A. tooth decay B. cholera
C. HIV and AIDS D. asthma
39. Diabetes and cancer are examples of _____.
A. short-term illnesses B. water borne diseases
C. epidemic diseases D. chronic diseases
40. To prevent the spread of epidemic diseases, communities should use _____.
A. proper waste disposal and vaccination
B. contaminated water
C. open defecation
D. unwashed utensils

**END OF TOPIC 1
EXAMINATION**

**SCIENCE AND TECHNOLOGY
7150/2**

PAPER 2

TIME: 1 HOUR 30 MINUTES

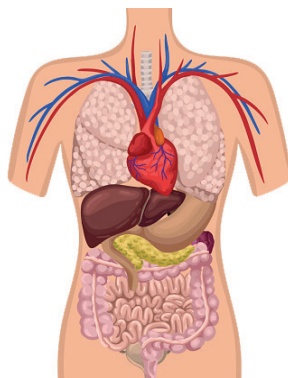
INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in Section A.
- Answer **any** four questions in Section B.

Section A

Answer **all** questions in the spaces provided.

- State **one** function of the stomach. [1]
 - Name **one** type of the human teeth used for cutting. [1]
 - Identify **one** type of the human teeth used for tearing. [1]
 - Give **one** way in which teeth support speech. [1]
 - Identify the flat teeth used for grinding food. [1]
- Identify the muscular organ that pumps blood throughout the body in the picture. [1]



- State **one** function of the circulatory system related to oxygen. [1]
 - Give **one** function of the circulatory system related to waste. [1]
 - Name the blood vessels that carry blood away from the heart. [1]
 - Identify the tiny vessels which carry nutrients to the cells. [1]
- Name **one** part of the respiratory system that filters air. [1]
 - Identify the muscle that helps in breathing. [1]
 - Suggest **one** disease that affects the lungs. [1]
 - State **one** function of the respiratory system besides breathing. [1]
 - Name the tube that carries air to the lungs. [1]

4. (a) Name **one** safe food handling practice related to the hands. [1]
 (b) Give **one** safe food handling practice related to the utensils. [1]
 (c) Why is food hygiene important for a child's growth? [1]
 (d) Name **one** common food-borne disease. [1]
 (e) Identify **one** effect of eating contaminated food. [1]
5. (a) State **one** of the types of pollution shown in the picture. [1]



- (b) State **one** effect of noise pollution. [1]
 (c) Identify **one** cause of noise pollution in a city. [1]
 (d) Suggest **one** way to reduce noise near a hospital. [1]
 (e) Name **one** health problem caused by stress from noise. [1]
6. (a) Name **two** child-killer diseases prevented by immunisation. [2]
 (b) Mention **one** way HIV is transmitted. [1]
 (c) Identify **one** practice of personal hygiene during puberty. [1]
 (d) State **one** benefit of regular bathing. [1]

Section B

Answer any **four** questions from this section.

7. (a) Name **one** healthy habit at home in the illustration below. [1]



- (b) State **one** example of bad food. [1]
 (c) How many times should a person brush their teeth daily? [1]
 (d) Name **one** item used to remove food stuck between teeth. [1]
 (e) Identify **one** type of food which is not good for dental health. [1]

8. (a) Identify **one** cause of air pollution shown in the picture.

[1]



- (b) State **one** effect of air pollution on the lungs. [1]
(c) Suggest **one** way to reduce water pollution in rivers. [1]
(d) Name **one** pollutant found in sewage. [1]
(e) Give **one** way to reduce smoke pollution in the environment. [1]
9. (a) State **one** symptom of a Sexually Transmitted Infection (STI). [1]
(b) Give **one** way to prevent the spread of STIs. [1]
(c) What is the importance of ART in managing HIV? [1]
(d) Name the passage for menstrual flow in females. [1]
(e) Identify the site of fertilisation in the female reproductive system. [1]
10. (a) Describe the eating disorder anorexia. [1]
(b) State **one** effect of Bulimia on the stomach. [1]
(c) Identify **one** cause of obesity. [1]
(d) Why should food be covered during preparation? [1]
(e) Name **one** cause of a food-borne diseases. [1]
11. (a) Identify the part of the blood that carries hormones. [1]
(b) State the role of the heart in the circulatory system. [1]
(c) Name the vessels that carry blood back to the heart. [1]
(d) State **one** way land pollution affects soil fertility. [1]
(e) Suggest **one** way of reducing land pollution. [1]
12. (a) Explain the term foodborne disease. [1]
(b) State **one** example of a foodborne disease. [1]
(c) Describe any **one** way of preventing foodborne diseases. [1]
(d) Give **one** indigenous way of storing food. [1]
(e) Explain the importance of storing food. [1]

School Based Project 1

Project title: Promoting food safety practices to prevent food borne diseases

1. Problem identification (5 marks)

1.1 Description (1 mark)

I have observed that many of my fellow learners and community members have limited knowledge regarding proper food safety practices. Poor handling, storage and preparation of food frequently lead to food-borne diseases such as salmonella, botulism and E-coli infections.

1.2 Brief statement of intent (1 mark)

My intention is to reduce the risk of illness by introducing a practical “food safety awareness project” that focuses on demonstrations, surveys and visual reminders within the school environment.

1.3 Design specifications (2 marks)

- (a) Conduct practical demonstrations on hand washing and safe food storage.
- (b) Create informative posters highlighting the causes and preventive measures of common food-borne infections.

2. Investigations of related ideas (5 marks)

2.1 Existing ideas (3 marks)

In our current school setup, food safety is mostly taught through textbooks and classroom lessons. We also have occasional health talks on hygiene and posters about washing hands displayed in kitchens and toilets.

Merits (3 marks)

- (a) We gain basic theoretical knowledge about food hygiene.
- (b) Posters serve as constant visual reminders for safe practices.
- (c) Health talks successfully raise our general awareness about diseases.

Demerits (3 marks)

- (a) The learning is mostly theoretical with very little practical demonstration.
- (b) Posters are often ignored by learners over time.
- (c) Many learners do not actually practise these safety measures once they are at home.

3. Generation of ideas (15 marks)

3.1 Possible solutions with analysis (10 marks)

I propose that we conduct practical food safety demonstrations using real kitchen materials. I also suggest we carry out a community survey on food handling and organise role-play sessions to show the real-life consequences of unsafe food preparation.

3.2 Evidence of ideas (3 marks)

- (a) A draft survey questionnaire for community members.
- (b) Sketches for posters showing the effects of salmonella and E-coli.
- (c) A script for a role-play on food handling.

3.3 Merits (3 marks)

- (a) This approach combines theory with essential practical skills.
- (b) It helps us develop real-life habits that can be used at home.
- (c) It directly reduces the immediate risk of food-borne diseases in our community.

3.4 Demerits (3 marks)

- (a) Practical demonstrations require extra materials like clean water and soap.
- (b) Conducting surveys may be time-consuming for some learners.
- (c) Showing real-life consequences of unsafe food preparation may require extra care and monitoring of learners.

4. Selection of choice and refinement (10 marks)

4.1 Indication of choice (1 mark)

I have chosen to implement a comprehensive food safety awareness project involving practical demonstrations and community surveys.

4.2 Justification (2 marks)

- (a) This approach moves beyond the textbook to provide hands-on experience.
- (b) It empowers learners to become health advocates in their own homes.

4.3 Refinements (6 marks)

- (a) Use real kitchen tools and soap to make demonstrations as accurate as possible.
- (b) Provide simple checklists that learners can take home to monitor their family's food storage.
- (c) Display final posters specifically in the school dining area where food is consumed.

5. Presentation of the final solution (10 marks)

5.1 Evidence presented (10 marks)

- (a) I have performed a correct demonstration of hand washing and food storage techniques through the tours and sessions done.
- (b) I have designed posters illustrating food-borne diseases and their prevention.

- (c) I have compiled written reports based on my community survey findings.
- (d) I have participated in group presentations and role-plays regarding food safety.

6. Evaluation of the solution and recommendations (5 marks)

6.1 Evaluation (3 marks)

- (a) I have demonstrated a significantly improved understanding of food safety.
- (b) I have observed improved hygiene practices among my peers at school.
- (c) There has been a noticeable reduction in reported cases of food-related stomach upsets.

6.2 Recommendations (2 marks)

- (a) I recommend that food safety projects be conducted every year for all classes.
- (b) Schools should involve local health workers and parents to further support food hygiene education.

Total marks: 50

Chapter 8

Educational technology and innovation

Educational technology interaction

Search engines

- A search engine is a website that helps users find information on the internet.
Examples: Google, Bing, Yahoo, Meta.
- Users type keywords to find information.
- Use quotation marks (“ ”) for exact phrases.
- Check reliability of sources before using information.

Applications and software

- Applications (apps) are programs designed to perform specific tasks.
Examples: Microsoft Word (typing), Excel (calculations), PowerPoint (presentations).
- Educational apps help learners research, revise and communicate.
- Software can be system software (Windows) or application software (Word).

Digital citizenship

- Digital citizenship means using technology responsibly and respectfully.
- Follow online rules and respect others.
- Do not cyberbully.
- Protect personal information.
- Think before posting online.

Research using different search engines

Benefits

- Quick access to information.
- Access to global knowledge.
- Saves time.
- Allows comparison of information from different sources.
- Helps learners develop research skills.

**END OF TOPIC 8
EXAMINATION**

SCIENCE AND TECHNOLOGY

7150/1

PAPER 1

TIME: 1 HOUR 45 MINUTES

INSTRUCTIONS TO CANDIDATES

- When you are told to start choose **one** correct answer from suggested answers.
- Answer **all** the questions on the separate answer sheet.

1. Using digital tools and online platforms to learn, research and complete schoolwork is called _____.
A. digital citizenship B. educational technology interaction
C. cyber wellness D. hardware security
2. Which online tool helps users find information by typing in keywords or phrases?
A. search engine B. spreadsheet
C. word processor D. firewall
3. To ensure finding reliable information online, one should _____.
A. use only the first result you see B. type clear keywords and check multiple sources
C. copy everything without checking D. only use one search engine
4. The items shown in the pictures are examples of _____.



- A. hardware devices B. applications and software
C. search engines D. viruses
5. Digital citizenship involves _____.
A. hacking into other people's computers
B. using the internet responsibly, safely and respectfully
C. sharing your password with strangers
D. bullying classmates on social media
6. Protecting the home address, school name and phone number online is a way to _____.
A. practise good digital citizenship B. improve your typing speed
C. help search engines find you D. become a black hat hacker

17. Which coding method uses visual blocks that are dragged and snapped together?
- A. Text-based programming.
 - B. Block-based coding.
 - C. Encryption.
 - D. Hacking.
18. The design process begins with _____.
- A. building a model
 - B. testing a product
 - C. identifying a problem
 - D. giving feedback
19. Ethics in robotics and coding means _____.
- A. creating harmful programs
 - B. respecting privacy and using technology for good
 - C. stealing other people's code
 - D. ignoring safety rules
20. A career involving the design and creation of video games as shown in the picture below is a _____.



- A. robotics engineer
 - B. game designer or developer
 - C. network administrator
 - D. data entry clerk
21. Cyber security is primarily about _____.
- A. protecting devices and online information from unauthorized access
 - B. making computers run faster
 - C. buying new laptops
 - D. designing websites
22. Keeping your smartphone in a safe place to prevent theft is an example of _____.
- A. software security
 - B. encryption
 - C. cyber wellness
 - D. hardware security
23. A harmful program that can damage files or delete information is a _____.
- A. firewall
 - B. computer virus
 - C. search engine
 - D. browser
24. Malware is a general term that includes _____.
- A. viruses, spyware and ransomware
 - B. keyboards and mice
 - C. word processors and spreadsheets
 - D. monitors and printers
25. Cyber wellness involves _____.
- A. spending all day playing video games
 - B. balancing screen time and maintaining good mental health
 - C. sharing personal photos with strangers
 - D. staying up all night on social media

26. Which of the following is an internet surfing best practice?
- A. Clicking on every unknown link.
 - B. Giving your password to anyone who asks.
 - C. Using trusted websites and verifying information.
 - D. Downloading files from suspicious emails.
27. Illegally accessing a computer network to steal information is called _____.
- A. encryption
 - B. hacking
 - C. coding
 - D. designing
28. The person in the picture below is most likely a _____.



- A. black hat hacker
 - B. blue hat hacker
 - C. grey hat hacker
 - D. white hat hacker
29. A security system that monitors and blocks dangerous network connections is a _____.
- A. firewall
 - B. search engine
 - C. loop
 - D. sensor
30. Encryption protects information by _____.
- A. deleting it
 - B. converting it into secret code
 - C. sharing it on social media
 - D. printing it out
31. Data protection laws are designed to _____.
- A. make the internet faster
 - B. protect people's privacy and prevent misuse of personal data
 - C. encourage hacking
 - D. sell personal information to companies
32. Which component allows a robot to detect changes in light or temperature?
- A. Actuator
 - B. Controller
 - C. Sensor
 - D. Motor
33. A variable in coding is used to _____.
- A. store information that can change
 - B. repeat an action
 - C. end the program
 - D. connect to Wi-Fi
34. "If the sensor detects a wall, then stop." This is an example of _____.
- A. a command
 - B. a condition
 - C. a loop
 - D. a variable

35. Text-based programming is often used for _____.
- A. beginners who cannot type
 - B. advanced programs like mobile apps and websites
 - C. drawing pictures
 - D. cleaning robots
36. An AI specialist is someone who _____.
- A. repairs computer engines
 - B. plants trees
 - C. works with technology that is incompatible to human needs
 - D. works with technology that mimics human intelligence
37. To prevent hacking, one should _____.
- A. use the same password for everything
 - B. use strong, unique passwords and update software regularly
 - C. use public Wi-Fi for bank transactions
 - D. turn off the firewall
38. Plagiarism means _____.
- A. giving credit to an author
 - B. copying someone else's work without permission
 - C. protecting your own work with a password
 - D. using a search engine correctly
39. The action shown in the picture below helps with software security by _____.



- A. making the computer pretty
 - B. increasing screen brightness
 - C. deleting all user files
 - D. fixing weaknesses and protecting against new viruses
40. Mobile application development involves _____.
- A. building robots for factories
 - B. designing apps for smartphones and tablets
 - C. writing letters by hand
 - D. selling computer hardware

SCIENCE AND TECHNOLOGY 7150/2

END OF TOPIC 8 EXAMINATION

PAPER 2

TIME: 1 HOUR 30 MINUTES

INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in Section A.
- Answer **any** four questions in Section B.

Section A

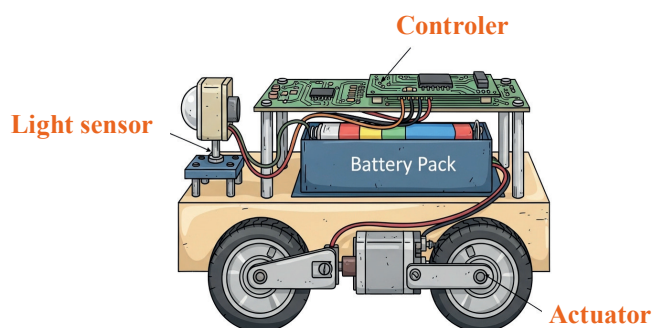
Answer **all** questions in this section.

- (a) What is a search engine? [1]
 - (b) Give an example of a popular search engine. [1]
 - (c) What symbols should a user use to search for an exact phrase? [1]
 - (d) State any **one** way to verify if an online source is reliable. [1]
 - (e) Mention any **one** benefit of comparing information from different search engines. [1]
- (a) Name the software used for managing calculations and budgets. [1]
 - (b) Which application is best for creating a classroom presentation? [1]
 - (c) Give any **one** example of system software. [1]
 - (d) Name the application shown in the picture below. [1]



- (e) State any **one** way educational apps help learners. [1]
- (a) Define digital citizenship. [1]
 - (b) Why should passwords never be shared? [1]
 - (c) State any **one** rule for respecting others online. [1]
 - (d) What should a digital citizen do before posting a comment online? [1]
 - (e) Give any **one** example of irresponsible digital behaviour. [1]
- (a) What is Artificial Intelligence (AI)? [1]
 - (b) Name any **one** AI voice assistant used in smart devices. [1]
 - (c) Mention any **one** way AI is used to help learners learn. [1]
 - (d) State any **one** positive impact of AI on work efficiency. [1]
 - (e) Give any **one** negative impact of AI on jobs or data privacy. [1]
- (a) Name a type of robot used in a hospital for surgery. [1]
 - (b) Which part of a robot is responsible for detecting changes in its environment? [1]
 - (c) Identify the component that acts as the brain of the robot. [1]

- (d) What is the function of an actuator shown in the picture below? [1]



- (e) Name the power source commonly used by mobile robots. [1]
6. (a) Define coding. [1]
(b) What is an algorithm in programming? [1]
(c) Why are loops used when writing a code? [1]
(d) Give an example of a block-based coding language for beginners. [1]
(e) What is a conditional statement in coding? [1]

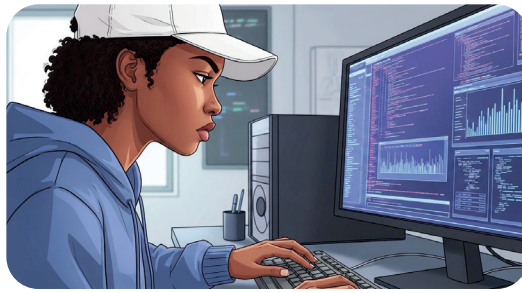
Section B

Answer **any four** questions from this section.

7. (a) What is the difference between block-based and text-based coding? [1]
(b) Name a text-based programming language used for building apps. [1]
(c) What is a script in programming? [1]
(d) State the first step in the design process for a new mobile app. [1]
(e) Why is testing important when developing a game? [1]
8. (a) Define cyber security. [1]
(b) Mention any **one** way to protect computer hardware physically. [1]
(c) State any **one** characteristic of a strong password. [1]
(d) Why is computer software always updated? [1]
(e) What is the best practice for using a computer in a public lab? [1]
9. (a) What is a computer virus? [1]
(b) Name the type of software used to detect and remove malware. [1]
(c) Define malware. [1]
(d) State any **one** way malware can damage a computer system. [1]
(e) What should not be clicked on to prevent a virus infection? [1]
10. (a) What does cyber wellness mean? [1]
(b) State any **one** sign of spending too much time online. [1]
(c) What should be done in case of cyberbullying? [1]
(d) Identify any **one** tip for safe internet surfing. [1]
(e) Why is it important to backup data regularly? [1]

11. (a) Define hacking as shown in the picture below.

[1]



(b) What is a white hat hacker?

[1]

(c) Name the security system that controls and blocks dangerous network traffic.

[1]

(d) What is encryption?

[1]

(e) State the role of a black hat hacker.

[1]

12. (a) What are data protection laws?

[1]

(b) State any **one** ethical rule to follow when using someone else's code.

[1]

(c) Name any **one** career path related to cyber security.

[1]

(d) How do data protection laws ensure personal privacy?

[1]

(e) Give any **one** example of an AI-powered device used at home.

[1]

School Based Project 8

Project title: Exploring the applications and impact of Artificial Intelligence in everyday life

1. Problem identification (5 marks)

1.1 Description (1 mark)

- (a) I have observed that while Artificial Intelligence (AI) is increasingly used in our smartphones and computers, many of my fellow learners use these tools without understanding how they work.
- (b) This lack of knowledge regarding AI's benefits and risks often leads to misuse, over-dependence and exposure to incorrect or biased information.

1.2 Brief statement of intent (1 mark)

My intention is to promote responsible digital citizenship by implementing an AI awareness project that focuses on the ethical use of technology and the development of clear usage guidelines.

1.3 Design specifications (2 marks)

- (a) Conduct a research project identifying specific AI-powered devices like smartphones, smart assistants and recommendation systems.
- (b) Create educational posters that clearly explain both the advantages and disadvantages of using AI in our daily lives.

2. Investigations of related ideas (5 marks)

2.1 Existing ideas (3 marks)

- (a) In our current school environment, we use smartphones and search engines for research.
- (b) Some of our teachers demonstrate AI-powered applications in class, though we have very limited discussions on the actual impact or ethics of using these tools.

Merits (3 marks)

- (a) AI tools allow us to access vast amounts of information very quickly.
- (b) Educational applications provide great support for our learning and revision.
- (c) AI-powered devices help us improve our overall communication and productivity.

Demerits (3 marks)

- (a) There is a high risk of plagiarism and becoming over-reliant on these automated tools.
- (b) We are often exposed to incorrect or biased information without realising it.
- (c) We have a very limited understanding of important ethical issues and data privacy.

3. Generation of ideas (15 marks)

3.1 Possible solutions with analysis (10 marks)

- (a) I propose that we develop a set of clear guidelines for the responsible and ethical use of AI within our school.
- (b) I suggest we organise a formal class debate to discuss the impact of AI on future jobs and education.
- (c) Furthermore, we should research specific AI applications in the fields of health, education and communication to understand their diversity.

3.2 Evidence of ideas (3 marks)

- (a) A draft “Code of Conduct” for using AI tools for school assignments.
- (b) A list of debate topics regarding AI ethics and data protection.
- (c) Sketches for posters showing the functions of various AI-powered devices.

3.3 Merits (3 marks)

- (a) This project directly promotes responsible and informed digital citizenship.
- (b) It increases our awareness of both the great benefits and the hidden risks of AI.
- (c) It better prepares us for future careers in a world dominated by technology.

3.4 Demerits (3 marks)

- (a) AI technology changes so fast that our research might become outdated quickly.
- (b) It can be difficult to find simple explanations for how complex AI algorithms work.
- (c) Debating on the impact of AI on future jobs and education may cause alarm in some learners.

4. Selection of choice and refinement (10 marks)

4.1 Indication of choice (1 mark)

I have chosen to implement a comprehensive AI awareness and responsible use project.

4.2 Justification (2 marks)

- (a) This choice encourages us to use critical thinking rather than just following what a computer says.
- (b) It provides a necessary framework for using modern tools safely and honestly.

4.3 Refinements (6 marks)

- (a) Provide clear, real-world examples of AI being used in health and communication to make the research more relatable.
- (b) Ensure all online research activities are supervised to protect our data privacy.
- (c) Include both written reports and oral presentations to help us practice communicating complex ideas clearly.

6. Presentation of the final solution (10 marks)

5.1 Evidence presented (10 marks)

- (a) I have compiled a research report on the various applications and impacts of AI.
- (b) I have designed and displayed posters showing common AI-powered devices.
- (c) I have participated in a class debate or panel discussion regarding AI ethics.
- (d) I have produced a written “Code of Conduct” for responsible AI use in our school.
- (e) I have performed an oral presentation explaining my findings to my peers.

6. Evaluation of the solution and recommendations (5 marks)

6.1 Evaluation (3 marks)

- (a) I have demonstrated a much deeper understanding of how AI works and its impact on society.
- (b) There is a visible improvement in how responsibly my fellow learners use digital tools.
- (c) Our school community is now much more aware of the ethical issues surrounding new technology.

6.2 Recommendations (2 marks)

- (a) I recommend that AI education be integrated across all subjects to ensure every learner stays updated.
- (b) The school should develop official policies to guide the long-term responsible use of AI tools.

Total marks: 50

ZIMBABWE GRADE SEVEN EXAMINATIONS

SCIENCE AND TECHNOLOGY PAPER 1

7150/1

Time: 1 hour 45 minutes

SPECIMEN PAPER

Additional materials:

Multiple choice answer sheet

Pencil rubber

Soft pencil (type B or HB is recommended)

INSTRUCTIONS TO CANDIDATES

1. Answer **all** questions on the separate answer sheet provided.
2. Use soft pencil for all entries on the answer sheet.
3. Choose **one** correct answer from the suggested answers and shade it **very dark**.
4. If you wish to change your answer, **erase it completely** with a pencil rubber and then shade the new choice.

INFORMATION FOR CANDIDATES

There are **forty** questions in this paper. Each correct answer will score one mark. Any rough working should be done on this question paper.

This specimen paper consists of 14 printed pages and 2 blank pages.

Specimen Paper

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EXAMINATION
PRACTICE

1

SCIENCE AND TECHNOLOGY

7150/1

PAPER 1

TIME: 1 HOUR 45 MINUTES

INSTRUCTIONS TO CANDIDATES

- When you are told to start choose **one** correct answer from suggested answers.
- Answer **all** the questions on the separate answer sheet.

1. Farmers prefer loamy soil because it _____.
 A. drains too quickly
 B. holds too much water
 C. supports healthy plant growth
 D. contains rocks
2. The diagram below shows a green plant.



Green plants manufacture their own food through _____.

- A. photosynthesis B. transpiration C. respiration D. germination
3. One example of a field crop grown in Zimbabwe is _____.
 A. maize B. spinach C. onion D. tomato
4. An animal that has a backbone is _____.
 A. a snail B. an ant C. a fish D. an earthworm
5. In a food chain, energy begins with the _____.
 A. decomposer B. primary consumer
 C. secondary consumer D. producer
6. The diagram below shows a farm tool.



This type of a tool is commonly used in farming to _____.

- A. measure length B. dig and weed
 C. cut timber D. tighten bolts

7. The raw materials needed for photosynthesis are water and _____.
A. oxygen **B.** glucose **C.** chlorophyll **D.** carbon dioxide
8. Legumes like groundnuts are mainly grown to provide _____.
A. starch **B.** protein **C.** roughage **D.** vitamins
9. Seeds need _____ to respire.
A. carbon dioxide **B.** nitrogen **C.** oxygen **D.** starch
10. How can farmers prevent their tools from rusting?
A. Exposing them to rain. **B.** Oiling metal parts.
C. Leaving them in the field. **D.** Keeping them dirty.
11. The tooth mainly responsible for cutting food is the _____.
A. premolar **B.** canine **C.** incisor **D.** molar
12. Blood circulation in the human body is made possible by the _____.
A. lungs **B.** heart **C.** kidneys **D.** brain
13. In the mouth, saliva helps food by _____.
A. absorbing nutrients **B.** breaking down fats
C. softening and mixing it **D.** removing waste
14. Where are nutrients absorbed into the bloodstream?
A. Stomach **B.** Large intestine. **C.** Small intestine. **D.** Oesophagus
15. Which of the following is a sign that a boy is entering puberty?
A. Hips widening. **B.** Menstruation
C. Voice becoming deeper. **D.** Breast development.
16. To keep teeth healthy, a learner should _____.
A. eat sweets regularly **B.** brush twice a day
C. avoid drinking water **D.** skip meals
17. The picture below shows a person eating contaminated food.



The person may suffer from _____.

- A.** asthma **B.** diabetes **C.** salmonella **D.** tuberculosis
18. Food is best protected from flies when it is _____.
A. left uncovered **B.** stored in the sun
C. properly covered **D.** placed on the floor

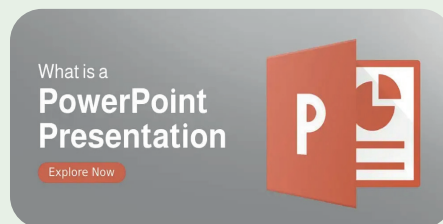
19. A major cause of obesity among children is _____.
A. overeating with little exercise **B.** drinking clean water
C. eating vegetables **D.** lack of sleep only
20. Which of the following wastes mainly pollutes water?
A. Dry leaves **B.** Sewage **C.** Compost **D.** Manure
21. Exhaust fumes from vehicles release _____.
A. oxygen **B.** hydrogen **C.** carbon monoxide **D.** nitrogen
22. Zimbabwe experiences very high temperatures during the _____.
A. cold season **B.** rainy season
C. harvesting season **D.** hot season
23. Iron is important in the body because it _____.
A. strengthens bones **B.** improves eyesight
C. helps blood carry oxygen **D.** prevents tooth decay
24. A good source of protein can be found in _____.
A. sugar **B.** cooking oil **C.** beans **D.** sadza
25. The diagram below shows a traditional food preservation method.



Identify the food preservation method shown.

- A.** Canning **B.** Drying **C.** Smoking **D.** Boiling
26. Temperature is measured using a _____.
A. ruler **B.** thermometer **C.** tape measure **D.** balance
27. Energy stored in food is known as _____.
A. chemical energy **B.** sound energy **C.** light energy **D.** heat energy
28. Which fuel source can be renewed naturally?
A. Petrol **B.** Coal **C.** Diesel **D.** Firewood
29. A disaster occurs when a hazard _____.
A. causes serious damage
B. is predicted early
C. happens in isolation
D. is well managed

30. Preparing communities through drills helps to _____.
 A. cause panic
 B. prevent hazards
 C. reduce disaster effects
 D. increase damage
31. HIV can be transmitted through _____.
 A. hugging
 B. coughing
 C. sharing sharp objects
 D. shaking hands
32. A healthy body is supported by eating a _____.
 A. sugary diet
 B. protein only diet
 C. balanced diet
 D. carbohydrate only diet
33. Which button turns a digital camera on and off?
 A. Shutter button
 B. Power button
 C. Zoom button
 D. Record button
34. Operating systems (OS) like Android are examples of _____.
 A. application software
 B. system software
 C. computer hardware
 D. internet protocols
35. A software developer must _____ their code to ensure it works properly.
 A. hide
 B. test
 C. delete
 D. ignore
36. Information security aims to protect against _____ access.
 A. authorised
 B. unauthorised
 C. daily
 D. unnecessary
37. Cyber wellness education teaches users how to be _____ online.
 A. fast
 B. invisible
 C. responsible
 D. famous
38. Which device is best for making video calls on the go?
 A. Printer
 B. Desktop computer
 C. Smartphone
 D. Scanner
39. The diagram below shows a Power Point presentation.



Which software can be used to create a Power Point presentation?

- A. System software
 B. Application software
 C. Antivirus software
 D. Networking software
40. Which career involves writing code to create applications?
 A. Data entry clerk
 B. Software developer
 C. Digital artist
 D. Network technician

Candidate Name

Centre Number

Candidate Number

ZIMBABWE GRADE SEVEN EXAMINATIONS

SCIENCE AND TECHNOLOGY PAPER 2

7050/2

SPECIMEN PAPER

Time: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Section A

Answer **all** questions.

Section B

Answer any **four** questions.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question.

This question paper consists of **two** sections, **A** and **B**.

FOR EXAMINER'S USE

Section A	
1	
2	
3	
4	
5	
6	
Section B	
TOTAL	

This question paper consists of 11 printed pages and 1 blank page.

Specimen Paper

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EXAMINATION PRACTICE

1

SCIENCE AND TECHNOLOGY 7150/2

PAPER 2

TIME: 1 HOUR 30 MINUTES

INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in Section A.
- Answer **any** four questions in Section B.

Section A

Answer **all** questions in this section.

- (i) What is meant by digestion in humans? [1]
 - (ii) State **one** function of the small intestine. [1]
 - (iii) State **one** function of the large intestines. [1]
 - (i) Identify the body system responsible for transporting blood. [1]
 - (ii) Give **one** role of this system in keeping the body healthy. [1]
- (i) What is puberty? [1]
 - (ii) State **one** physical change that occurs in girls during puberty. [1]
 - (iii) State **one** physical change that occurs in boys during puberty. [1]
 - (i) Explain what is meant by personal hygiene. [1]
 - (ii) State **one** hygiene practice that prevents the spread of disease. [1]
- (i) Name **one** nutrient required by the human body. [1]
 - (ii) Give **one** function of the nutrient named above. [1]
 - (i) What is a balanced diet? [1]
 - (ii) Why is eating a balanced diet important for growing children? [1]
 - Identify **one** method of food preservation. [1]
- (i) What is meant by environmental pollution? [1]
 - (ii) Name **one** source of air pollution. [1]
 - (iii) Name **one** source of water pollution. [1]
 - (i) The diagram below shows wilted crops. [1]



- (i) Name the cause of wilting. [1]
 - (ii) State **one** effect of climate change experienced in Zimbabwe. [1]

5. (a) (i) The diagram below shows a field crop.

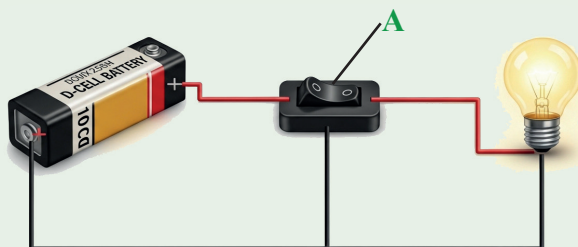


- Name the crop. [1]
- (ii) Give **one** example of a field crop grown locally other than the one in above. [1]
- (b) (i) Identify **one** farming tool used for digging. [1]
- (ii) Name **one** farming tool used for weeding. [1]
- (iii) State **one** safety rule to follow when using farm tools. [1]
6. (a) (i) What is a search engine? [1]
- (ii) Give **one** way of checking if information found online is correct. [1]
- (b) (i) What is hacking? [1]
- (ii) Name any **one** type of hacking. [1]
- (c) Define cyberbullying. [1]

Section B

Answer **any four** questions from this section.

7. (a) (i) Distinguish between vertebrates and invertebrates. [1]
- (ii) Name **one** example of a vertebrate. [1]
- (iii) Name **one** example of an invertebrate. [1]
- (b) (i) What is a food chain? [1]
- (ii) Identify the role played by plants in a food chain. [1]
8. (a) (i) What is a pest? [1]
- (ii) Name **one** example of pests which attack crops. [1]
- (b) (i) What are weeds? [1]
- (ii) State **one** way of controlling weeds. [1]
- (c) What term do we give to chemicals that eliminate weeds? [1]
9. (a) Identify the type of circuit shown below. [1]



- (b) Name the part labelled **A** in the diagram above. [1]
- (c) What happens when this circuit is closed? [1]

10. (a) Explain the term disaster. [1]
 (b) State **one** example of a natural disaster. [1]
 (c) Give **one** effect of disasters to humans. [1]
 (d) Explain the role of the Civil Protection Unit Department. [1]
 (e) Describe any **one** way a school can plan for a disaster. [1]

11. (a) The table shows a computer program.

	A	B	C	D
1	Name	Age		
2	Chakaz	34		
3	Matemera	18		
4	Chimwaza	22		
5	Vanorira	30		
6				

What type of program is shown?

- (b) How do we name a cell using the above program? [1]
 (c) Study the figures shown in the following table. [1]

	A	B
1	Name	Age
2	Chakaz	34
3	Matemera	18
4	Chimwaza	22
5	Vanorira	30
6		
7	Average age	26

Write down the formula that is used to find the average of the ages.

- (d) Which cells from the table are highlighted to create a chart? [1]
 (e) In Microsoft Office Excel rows are labelled using _____. [1]
12. (a) Explain the term cyberbullying. [1]
 (b) State any **one** danger of using the internet apart from cyberbullying. [1]
 (c) Write **one** way in which a user can be safe while using the internet. [1]
 (d) Name **one** form of information that can be sent on an instant messaging platform. [1]
 (e) Give **one** example of an instant messaging software application. [1]

End of topic 1 examination

Section A

Question	Suggested answers
1.	(a) Storing food. / Churning food. / Breaking down food with acid. / Digestion (b) Incisors (c) Canines (d) They act as a surface for the tongue to press against to create sounds. / Helping to form specific letters like 't' or 'd'. (e) Molars / Premolars
2.	(a) Heart (b) Transporting oxygen from the lungs to the body cells. / Supplying oxygen to tissues. (c) Carrying carbon dioxide to the lungs for excretion. / Transporting urea to the kidneys. (d) Arteries (e) Capillaries
3.	(a) Nose / Cilia / Nasal hair (b) Diaphragm (c) Tuberculosis (TB) / Lung cancer / Asthma / Pneumonia / Bronchitis (d) Removing carbon dioxide. / Producing sound for speech. / Regulating body temperature. (e) Trachea / Windpipe
4.	(a) Washing hands with soap before touching food. / Keeping fingernails short and clean. (b) Washing plates and pots with clean water and detergent. / Storing utensils in a clean, dry place. (c) It prevents illnesses that can lead to malnutrition or stunted growth. (d) Cholera / Typhoid / Dysentery (e) Stomachache / Diarrhoea / Vomiting / Food poisoning
5.	(a) Hearing loss. / Tinnitus (ringing in ears). / Permanent deafness (b) It causes distraction and makes it difficult to focus on tasks. / Reduced productivity. (c) Vehicle hooting. / Construction machinery. / Loud music from shops. / Industrial sirens (d) Setting up "Silence Zone" signs. / Planting trees to act as sound barriers. / Banning hooting. (e) Hypertension (high blood pressure). / Sleep disorders. / Anxiety / Headaches

End of topic 8 examination

Section A

11.	(a) Actions taken to reduce the severity or impact of a hazard. (b) Building dams. / Clearing drainage systems. / Planting trees. (c) Mitigation reduces the risk; preparedness is being ready to act. (d) Building earthquake-resistant structures. (e) Informed people can take steps to protect themselves and reduce loss.
12.	(a) Factory smoke. / Car exhaust. / Burning waste. (b) It reduces oxygen in water and poisons them. (c) Cholera / Typhoid (d) It is caused by humans and harms the environment and animals. (e) Using filters on chimneys. / Switching to cleaner energy.

Question	Suggested answers
1.	(a) A software system used to search for information on the World Wide Web. (b) Google / Bing / Yahoo / DuckDuckGo (c) Quotation marks (" ") (d) Check the author. / Check the date. / Look for official websites (.gov or .org). (e) It helps ensure the information is accurate and unbiased.
2.	(a) Spreadsheet software (for example, MS Excel) (b) Presentation software (for example, MS PowerPoint) (c) Operating System (Windows/Android) / Device drivers. (d) WhatsApp (e) They make learning interactive and available anywhere.
3.	(a) The responsible and ethical use of technology and the internet. (b) To prevent them from accessing your private accounts or stealing data. (c) Avoid using bad language. / Do not post mean comments. (d) Think if it is true, helpful, inspiring, necessary or kind (THINK). (e) Cyberbullying / Spreading fake news. / Plagiarism
4.	(a) The ability of a machine to simulate human intelligence and problem-solving. (b) Siri / Google Assistant / Alexa (c) Providing personalised tutoring. / Grading quizzes. / Language translation. (d) It can perform repetitive tasks faster and without errors. (e) Loss of jobs to automation. / Misuse of personal data.
5.	(a) Robotic surgical system (for example, Da Vinci robot) (b) Sensors (c) Controller / Processor (d) It converts energy into motion to move the robot's parts. (e) Rechargeable batteries. / Lithium-ion batteries.

Examination practice 1

Section A

Question	Suggested answers
1.	(a) (i) The process of breaking down food into smaller, soluble pieces that the body can absorb and use for energy and growth. (ii) To absorb nutrients and minerals from digested food into the bloodstream. (iii) To absorb water and salts from the remaining indigestible food and turn it into solid waste. (b) (i) Circulatory system. (ii) To transport oxygen and nutrients to body cells. / To remove waste products like carbon dioxide from cells. / To carry antibodies that help the body fight infections. (a) (i) The stage of life when a child's body develops into an adult body and becomes capable of reproduction. (ii) Developing breasts / Starting menstruation / Widening of hips. (iii) Deepening of the voice / Growth of facial hair / Broadening of shoulders. (b) (i) The act of keeping one's body clean to maintain health and prevent illness. (ii) Washing hands with soap and water after using the toilet.
2.	(a) (i) The stage of life when a child's body develops into an adult body and becomes capable of reproduction. (ii) Developing breasts / Starting menstruation / Widening of hips. (iii) Deepening of the voice / Growth of facial hair / Broadening of shoulders. (b) (i) The act of keeping one's body clean to maintain health and prevent illness. (ii) Washing hands with soap and water after using the toilet.
3.	(a) (i) Carbohydrates / Proteins / Fats / Vitamins / Minerals (ii) To provide energy. / For growth and repair of body tissues. / To protect the body against diseases. (b) It provides all the necessary nutrients for physical growth and mental development. / It strengthens the immune system. (c) Drying / Salting / Smoking / Canning / Refrigeration / Fermentation
4.	(a) (i) The introduction of harmful substances or contaminants into the natural environment that cause adverse changes. (ii) Smoke from factories. / Exhaust fumes from vehicles. / Burning of waste. / Dust from mining. (iii) Dumping of industrial waste into rivers. / Sewage leaks. / Oil spills / Chemicals from gold panning. (b) (i) Lack of water (Drought). (ii) Frequent and severe droughts / Unpredictable rainfall patterns / High temperatures / Occurrences of tropical cyclones.
5.	(a) (i) Sunflower (ii) Sorghum / Millet / Wheat / Soya beans (b) (i) Pick / Shovel / Hoe (ii) Hoe / Hand fork. (iii) Always carry sharp tools with the blade or point facing downwards. / Do not leave tools lying on the ground with sharp edges facing up. / Wear protective clothing like boots and gloves.

Examination practice 7 Answers

Section A

Question	Suggested answers
1.	(a) Vitamins / Minerals / Protein. (b) Ability to cope with stress. / Feeling happy and confident. / Getting along well with others. (c) To remove dirt, chemicals and germs that can cause diseases. (d) A sudden outbreak of an infectious disease that spreads rapidly among many people in a community. (e) To prevent the spread of waterborne diseases like cholera and typhoid.
2.	(a) Tools or machines used on a farm to help with various farming tasks. (b) Hoe (c) Animal-drawn implements are pulled by animals like oxen or donkeys, while motorised implements are powered by engines or tractors. (d) To break down large soil clods and create a smooth seedbed for planting. (e) They allow work to be done much faster and more efficiently over a large area.
3.	(a) Reptiles (b) Frog / Toad (c) Growing thicker fur / Hibernating / Migrating to warmer places. (d) They pollinate the flowers so that fruit can grow. (e) Production of honey and wax for sale.
4.	(a) To break down food using stomach acid and enzymes. (b) Food pipe. (c) They take in oxygen and remove carbon dioxide from the body. (d) Artery / Capillary (e) To transport oxygen and nutrients to all parts of the body.
5.	(a) Printer (b) To input text, numbers, and commands into the computer. (c) Laptop / Tablet / Smartphone (d) It can slow down the connection or steal sensitive information. (e) Trojan horse / Worm / Macro virus.
6.	(a) Axe / Machete (b) Flat file. (c) To prevent the tool head from flying off and injuring someone. (d) In a toolbox or on a designated shelf in a dry shed. (e) Never run while carrying sharp tools.