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(b) The amount of activity carried out by a person varies. There can be an increase in activity such as vigorous exercise or a decrease such as sleeping. Explain why the rate of breathing changes when there is a change in activity.

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(c) Describe how oxygen and carbon dioxide are carried in the blood.

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(Total 20 marks)

Q1



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If you answer Question 2, put a cross in this box .

2. Digestion of food begins in the mouth.

(a) Describe how the structures of incisors, canines and molars are each suited to their functions.

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(b) (i) Explain how tooth decay is caused and how thorough brushing of your teeth is likely to reduce tooth decay.

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(ii) Describe the importance of a suitable diet in the development of healthy teeth and gums.

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(c) Apart from chewing, what other processes occur in the mouth to help digest a piece of bread?

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(Total 20 marks)

Q2

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If you answer Question 3, put a cross in this box .

- 3. (a) What is meant by the term **tissue**? Explain your answer with reference to **two** named examples.

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(b) Describe the functions of each of the following cell organelles:

- nucleus
- mitochondria
- cytoplasm.

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(c) What is an **enzyme**? Explain why enzymes are important in living organisms.

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(Total 20 marks)

Q3



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If you answer Question 4, put a cross in this box ☒.

4. Reflex actions occur in many parts of the body.

(a) What is meant by the term **reflex action**?

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(b) Draw a diagram to show a reflex arc for a withdrawal reflex that would allow a person to remove their finger from a hot plate. On the diagram, label the structures that make up the reflex arc.

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(b) Explain why gametes (sperm and ova) are produced by meiosis rather than by mitosis.

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(c) Give an outline of the changes that occur in the growth and development in a boy between the ages of 12 and 16 years.

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(Total 20 marks)

Q5

TOTAL FOR SECTION A: 60 MARKS



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SECTION B

Answer any TWO questions in this section.

If you answer Question 6, put a cross in this box .

6. (a) In many parts of the world, the number of cars is increasing and many people continue to smoke. Describe how exhaust gases from cars and the smoking of cigarettes affect the quality of the air that people breathe and their health.

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13
Turn over

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(b) Describe how the body responds to bacterial diseases.

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(c) Explain why a person is able to become immune to a bacterial disease, such as tuberculosis, but cannot develop immunity to diseases that result from smoking.

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(Total 20 marks)

Q6

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If you answer Question 7, put a cross in this box ☒.

7. (a) Draw a large labelled diagram to illustrate the structure of a bacterium.

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(b) Some bacteria are pathogens. Explain, giving **two** bacterial examples, what is meant by the term **pathogen**.

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(c) Describe ways in which bacteria and fungi are useful to us.

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(d) Give **three** ways in which the structure of a fungus differs from that of a bacterium.

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(Total 20 marks)

Q7

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(b) (i) Explain how epidemic diseases differ from endemic diseases.

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(ii) Explain why tuberculosis could become an epidemic but Schistosomiasis is unlikely to become an epidemic.

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Q8

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If you answer Question 9, put a cross in this box .

9. (a) Explain how humans depend on plants for their survival.

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(b) A food chain shows how energy is passed from producers to different consumers. Suggest why food chains do not usually contain more than four consumers.

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(c) Irradiation can be used to preserve food. Describe **four** other methods of food preservation and, in each case, explain why it is successful.

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Q9

(Total 20 marks)

TOTAL FOR SECTION B: 40 MARKS

TOTAL FOR PAPER: 100 MARKS

END

