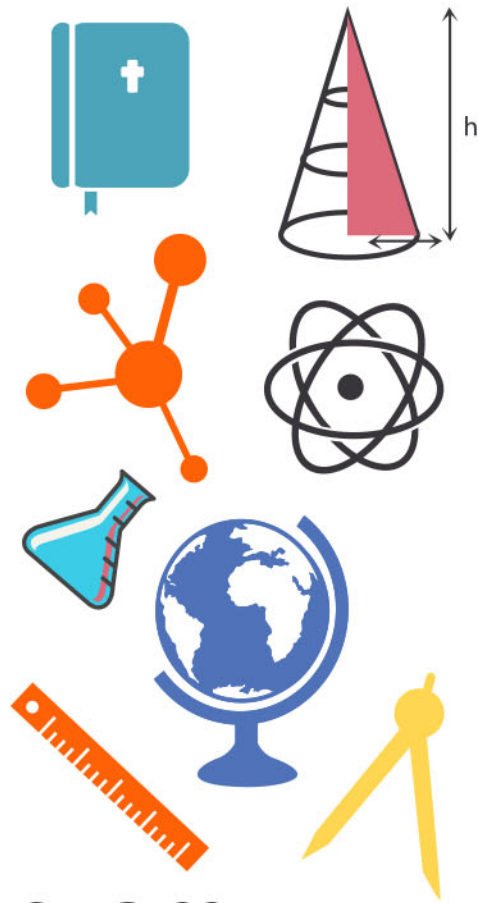


student **BJC** exam
Past Paper Booklet
Health
Science



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BJC Health Science

Year 2008

Papers 1 & 2

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|------------|---------------|
| SCHOOL No. | CANDIDATE No. |
| | |
| INITIALS | SURNAME |
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0055 HEALTH SCIENCE

PAPER 1 MULTIPLE CHOICE ITEMS (40 MARKS)

Wednesday **4 June 2008** 9:00–10:00 A.M.

MINISTRY OF EDUCATION BAHAMAS JUNIOR CERTIFICATE EXAMINATION 2008

INSTRUCTIONS TO CANDIDATES

- Write your school number, candidate number, surname and initials in the spaces provided at the top right hand side of this page.
- For each question or item, there are four suggested answers – A, B, C, and D. When you have selected an answer to a question or item, circle the letter of the answer you have selected.

FOR EXAMPLE:

What body system is responsible for transporting oxygen around the body?

- A the circulatory system
 B the excretory system
 C the immune system
 D the nervous system
- If you want to change your choice, erase the unwanted circle clearly or place an X across the letter. Then proceed to circle the letter which you think is correct.

FOR EXAMPLE:

What body system is responsible for transporting oxygen around the body?

- A the circulatory system
 B the excretory system
 C the immune system
 D the nervous system

1. What part of the skeleton protects the lungs?

- A the cranium
- B the mandible
- C the pelvis
- D the rib cage

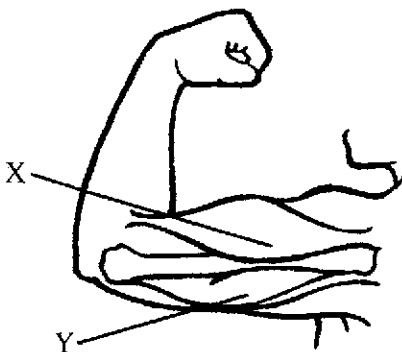
2. Which row in this table gives the correct information about numbers of bones in the human body?

| | Total Number of Rib Bones | Total Number of Humerus Bones | Total Number of Patella Bones | Total Number of Femur Bones |
|---|---------------------------|-------------------------------|-------------------------------|-----------------------------|
| A | 12 | 1 | 2 | 4 |
| B | 24 | 2 | 2 | 2 |
| C | 30 | 4 | 1 | 2 |
| D | 36 | 3 | 4 | 3 |

3. Muscles that work as opposite pairs to move bones are called _____.

- A antagonistic muscles
- B artistic muscles
- C egotistic muscles
- D protagonistic muscles

4. This diagram shows the muscles and bone in the upper arm.



What must happen in order to straighten the arm at the elbow?

- A Muscle X must contract and push the lower arm down.
- B Muscle X must relax and pull the lower arm down.
- C Muscle Y must contract and pull the lower arm down.
- D Muscle Y must relax and pull the lower arm down.

5. Which system of the body produces cells that contain only 23 chromosomes in the nucleus?

- A the circulatory system
- B the endocrine system
- C the excretory system
- D the reproductive system

6. Which row in this table correctly shows how the named nutrients are mainly used by the body?

| | Used for Growth | Used for Energy |
|---|----------------------------|----------------------------|
| A | Fats and Fibre | Carbohydrates and Minerals |
| B | Fibre and Vitamins | Water and Fats |
| C | Carbohydrates and Proteins | Vitamins and Water |
| D | Proteins and Minerals | Carbohydrates and Fats |

7. Which of these lists gives the correct order for food passing through the digestive system?

- A oesophagus → stomach → large intestine → small intestine
- B oesophagus → stomach → small intestine → large intestine
- C oesophagus → liver → pancreas → small intestine
- D oesophagus → large intestine → small intestine → rectum

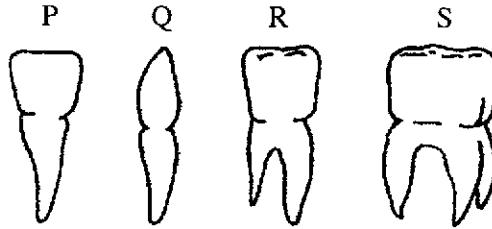
8. What substance is mainly absorbed in the large intestine?

- A blood
- B digested food
- C fibre
- D water

9. Which row in the table below correctly identifies the end-products of digestion?

| | End-Product of Protein Digestion | End-Product of Fat Digestion | End-Product of Carbohydrate Digestion |
|---|----------------------------------|------------------------------|---------------------------------------|
| A | Amino Acids | Fatty Acids and Glycerol | Glucose |
| B | Glucose | Lipase | Fibre |
| C | Lipase | Starch | Sucrose |
| D | Calcium | Amino Acids | Fatty Acids and Glycerol |

10. When faeces is passed out of the body, the process is known as _____.
- A assimilation
B egestion
C ingestion
D indigestion
11. This diagram shows the four different kinds of teeth found in the human mouth.



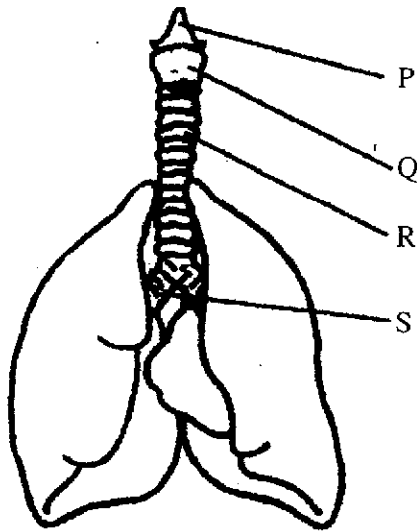
Which row in the table below gives the correct, total number of each type of tooth in the full set of human permanent teeth?

| | P | Q | R | S |
|---|----|---|----|----|
| A | 8 | 4 | 8 | 0 |
| B | 12 | 4 | 8 | 4 |
| C | 4 | 8 | 12 | 8 |
| D | 8 | 4 | 8 | 12 |

12. Which of these is a function of the liver?
- A It absorbs water from undigested food.
B It produces gastric juice.
C It produces bile.
D It stores hydrochloric acid.
13. Which row in this table gives correct information about the **platelets** in human blood?

| | Absorbs and Carries Oxygen | Produces Antibodies | Aids in Clotting |
|---|----------------------------|---------------------|------------------|
| A | No | No | Yes |
| B | Yes | Yes | No |
| C | Yes | No | No |
| D | No | Yes | Yes |

The diagram below shows some of the structures found in the human respiratory system. Questions 14, 15 and 16 all refer to this diagram.



14. What is R on the diagram?
- A the aorta
 - B the oesophagus
 - C the eustachian tube
 - D the trachea
15. What kind of tissue lines the inside of R?
- A bone
 - B cardiac muscle
 - C cartilage
 - D ligaments
16. What is normally found inside the part of the diagram labelled Q?
- A adrenal glands
 - B alveoli
 - C villi
 - D vocal cords
17. What happens during gas exchange in the lungs?
- A carbon dioxide diffuses into the blood and oxygen diffuses out of the blood.
 - B carbon dioxide diffuses out of the blood and oxygen diffuses into the blood.
 - C carbon dioxide and oxygen diffuse into the blood.
 - D carbon dioxide and oxygen diffuse out of the blood.

18. Which component of your blood engulfs and destroys germs in the body?
- A platelets
 - B plasma
 - C red blood cells
 - D white blood cells
19. Which of these materials does blood bring to the body's cells?
- A carbon dioxide
 - B digestive juices and enzymes
 - C nutrients and oxygen
 - D waste products
20. Why do hospitals ask people to donate blood?
- A Blood is often needed for surgeries and operations.
 - B Doctors need to make monthly deposits at the blood bank.
 - C Hospitals want to examine blood to see if it is healthy.
 - D People usually have more blood than they need for themselves.
21. Which row in the table below gives correct information about where blood flows in each part of the circulatory system?

| | Coronary Circulation | Systemic Circulation | Pulmonary Circulation |
|---|-------------------------|-------------------------|-----------------------|
| A | Lungs | Body Organs and Tissues | Heart Muscles |
| B | Body Organs and Tissues | Heart Muscles | Lungs |
| C | Heart Muscles | Body Organs and Tissues | Lungs |
| D | Body Organs and Tissues | Lungs | Heart Muscles |

22. A person is admitted to the hospital with bleeding from the rectum. What body organ would be the most likely source of the bleeding?
- A the kidney
 - B the large intestine
 - C the liver
 - D the stomach

23. Which statement about digestion is true?

- A Digestion begins in the stomach and ends in the large intestine.
- B Digestion begins in the oesophagus and ends in the pancreas.
- C Digestion begins in the throat and ends in the anus.
- D Digestion begins in the mouth and ends in the small intestine.

24. Which row in the table below correctly tells **where** the named enzymes are **produced**?

| | Amylase | Pepsin | Lipase |
|---|----------|---------|----------|
| A | Stomach | Mouth | Pancreas |
| B | Pancreas | Stomach | Mouth |
| C | Mouth | Stomach | Pancreas |
| D | Pancreas | Mouth | Stomach |

25. Which statement about the endocrine system is true?

- A A swollen thyroid gland is called a goiter.
- B Endocrine glands are duct glands.
- C Growth hormone is produced by the adrenal glands.
- D Only females produce hormones.

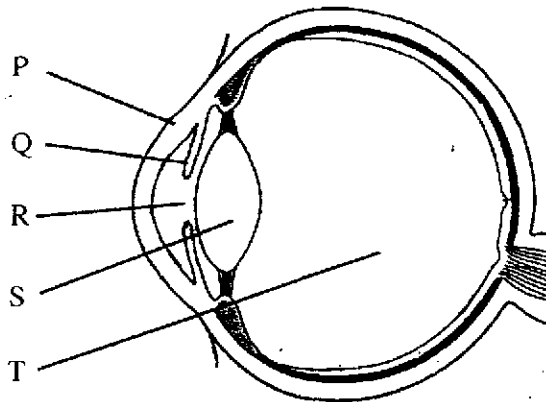
26. Which hormone is mainly responsible for the development of male secondary sex characteristics?

- A adrenalin
- B oestrogen
- C progesterone
- D testosterone

27. Which of these is the cause of diabetes?

- A not enough lymph in the tissues
- B little or no insulin in the blood
- C too much bile in the liver
- D too few enzymes in the cells

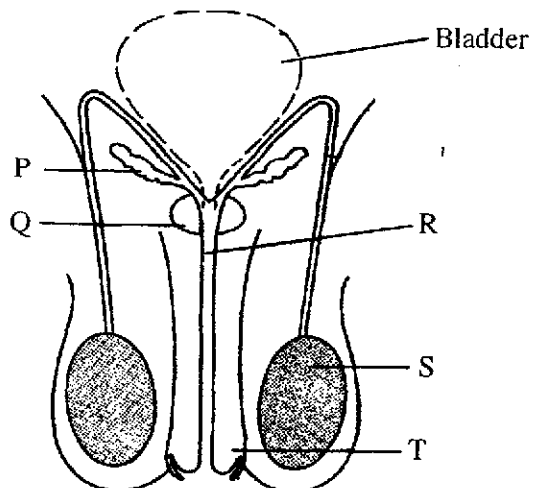
The diagram below represents the human eye, cut in half and seen from the side. Questions 28, 29 and 30 all refer to this diagram.



28. Which letters on the diagram point to eye parts that are transparent?
- A P, Q and R
 B P, Q and S
 C P, S and T
 D Q, R and S
29. What is the function of Q on the diagram?
- A It controls the up and down movements of the eyeball.
 B It secretes a fluid that helps to clean the eyeball.
 C It focuses light rays on to the retina.
 D It changes the size of the pupil.
30. Cataract is an eye condition that can cause a loss of vision. What labelled part of the diagram is affected by this condition?
- A part P
 B part Q
 C part S
 D part T
31. Which row in the table below correctly matches the part of the human ear with its description?

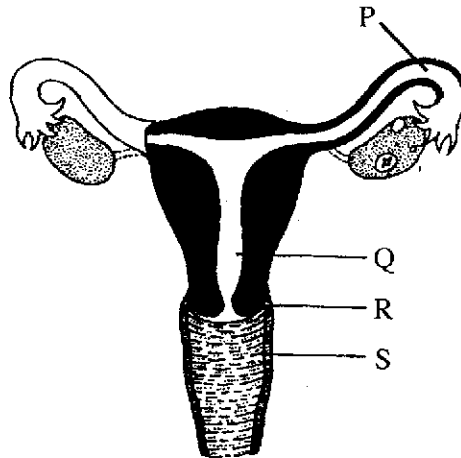
| | EAR PART | DESCRIPTION |
|---|---------------------|---|
| A | Auditory Nerve | Vibrates when struck by sound waves |
| B | Cochlea | Helps to maintain balance |
| C | Eustachian Tube | Connects the middle ear with the throat |
| D | Semicircular Canals | Directs sound waves on to the eardrum |

The diagram below shows some of the parts of the male reproductive system. Questions 32 and 33 both refer to this diagram.



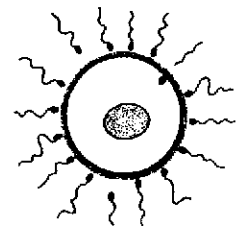
32. Which letters on the diagram point to structures that together produce semen?
- A P and Q
 - B Q and R
 - C R and S
 - D S and T
33. What is the function of the part labelled S on the diagram?
- A It produces and stores urine.
 - B It produces enzymes and synovial fluid.
 - C It produces sperm cells and testosterone.
 - D It produces and stores tissue fluid and lymph.

34. This diagram shows the female reproductive system.



Which letter on the diagram points to where fertilization normally takes place?

- A P
 B Q
 C R
 D S
35. Where in the female reproductive system are oestrogen and progesterone made?
- A in the ovaries
 B in the testes
 C in the uterus
 D in the vagina
36. What biological process is shown in the diagram at the right?



- A copulation
 B fertilization
 C implantation
 D ovulation
37. When a woman is pregnant, which way does blood normally pass across the placenta?
- A from the foetus to the mother
 B from the mother to the foetus
 C from the mother to the foetus and from the foetus to the mother
 D blood does not normally pass across the placenta

38. Mario and Dario are fraternal twins. Which of these statements about them is correct?
- A They both have half the normal number of chromosomes in their body cells.
 - B They both have twice the normal number of chromosomes in their body cells.
 - C They both have the same number of chromosomes in their body cells.
 - D Dario has twice as many chromosomes in his body cells as Mario has.

39. Which row in the table below correctly matches a disease with the part of the body it affects?

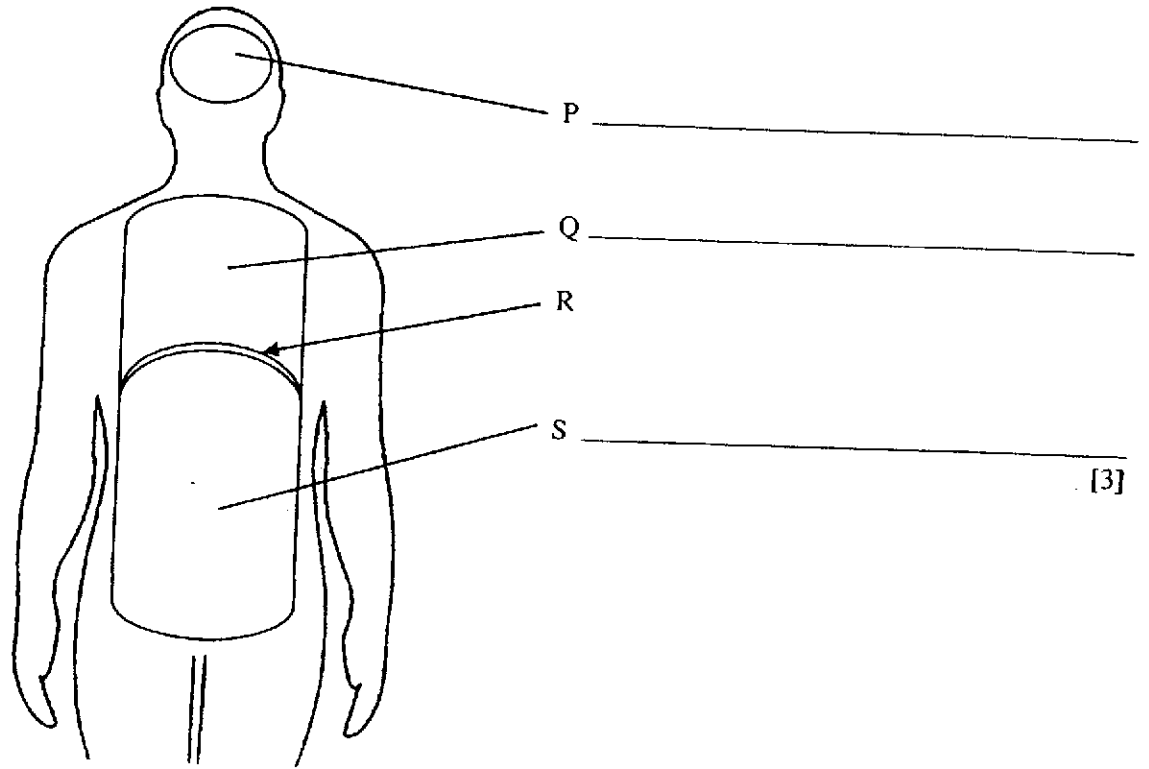
| | DISEASE | BODY PART AFFECTED |
|---|--------------|--------------------|
| A | Anemia | Skin |
| B | Hepatitis | Liver |
| C | Tuberculosis | Blood |
| D | Pneumonia | Stomach |

40. Which of the following is **not** a sexually transmitted disease?

- A herpes
- B gonorrhoea
- C malaria
- D syphilis

1. The diagram below represents the position of the cavities in the human body.

(a) Write the names of the cavities, labelled P, Q, and S, on the lines below.



(b) (i) Name the structure labelled R on the diagram.

(ii) What kind of tissue is structure R made of?

[2]

(c) Complete the following table by writing in the missing information about the body cavities. You are to name an organ contained in the cavity and then name the body system that the organ belongs to. Cavity S is done for you as an example.

| Body Cavity | Organ It Contains | System It Belongs To |
|-------------|-------------------|----------------------|
| P | | |
| Q | | |
| S | Stomach | Digestive System |

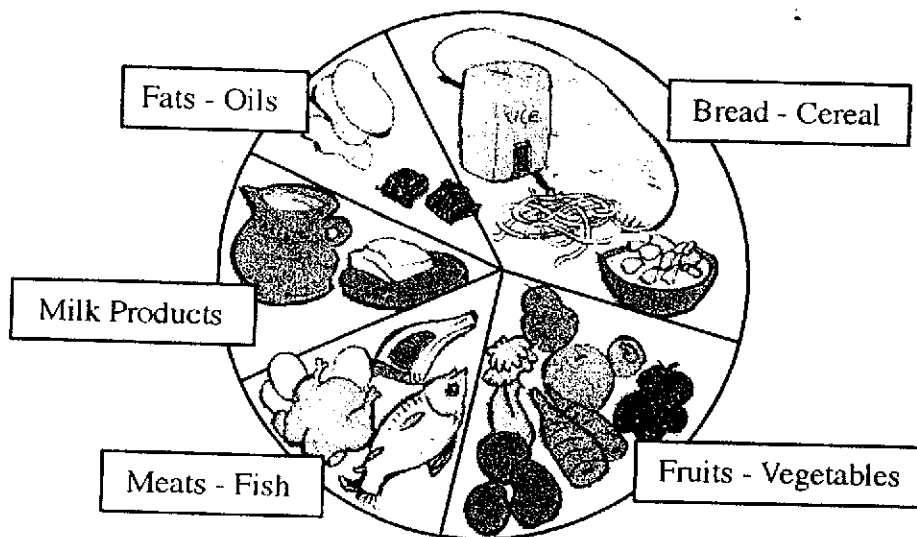
[4]

(d) Systems are made of organs. Organs are made of tissues. What are tissues made of?

[1]

Total Marks [10]

2. This diagram shows the main food groups.



(a) Define the term "balanced diet". _____
 _____ [1]

(b) Which food group would be the best source for: (i) carbohydrates, _____
 (ii) proteins, _____
 (iii) vitamins? _____ [3]

(c) Anaemia is a deficiency disease caused by a lack of a specific nutrient in a person's diet. Name the nutrient that is lacking and give one common symptom of anaemia.
 (i) nutrient that is lacking _____
 (ii) common symptom of anaemia _____ [2]

(d) This table gives the energy value for some common foods.

| Food | Energy (kJ per 100 g) |
|---------|-----------------------|
| Milk | 268 |
| Cabbage | 64 |
| Sausage | 1225 |
| Chicken | 540 |

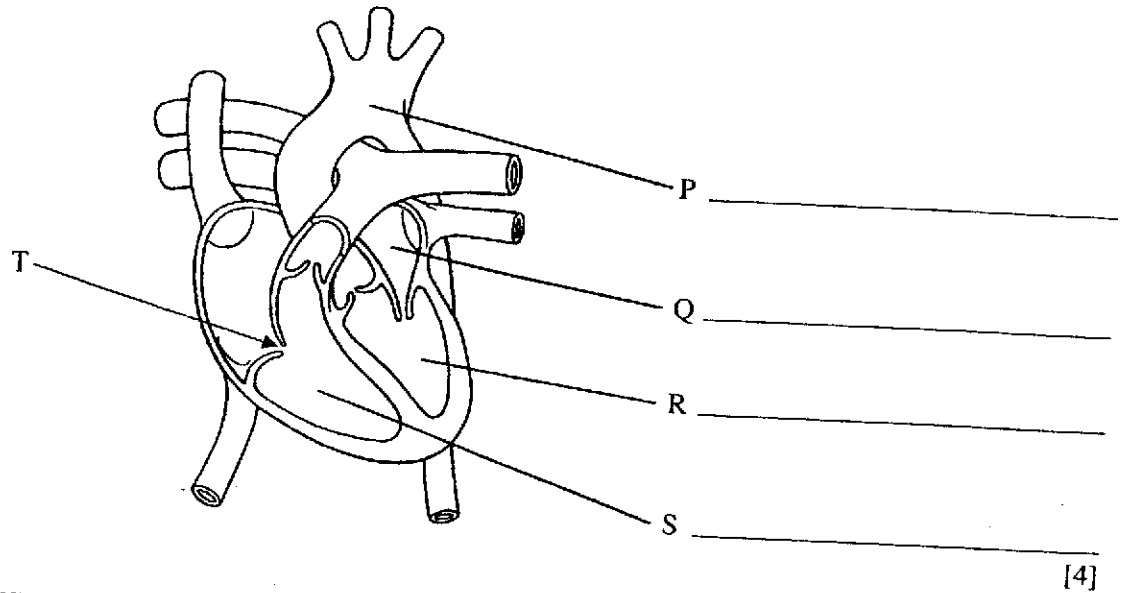
How much energy is in:

(i) 50 g of milk, _____
 (ii) 200 g of sausage, _____
 (iii) 150 g of cabbage? _____ [3]

(e) Which of the four foods in the table would be the best source of roughage? _____ [1]

3. This diagram represents the human heart, seen from the front and cut in half.

(a) Write the names of the parts of the diagram labelled P, Q, R and S.



(b) What is the function of the part labelled T on the diagram? _____
_____ [1]

(c) Describe one way that the blood in R is different from the blood in S. _____

_____ [1]

(d) The heart pumps both oxygenated and deoxygenated blood.

(i) Where does the blood become oxygenated? _____

(ii) Where does the blood become deoxygenated? _____ [2]

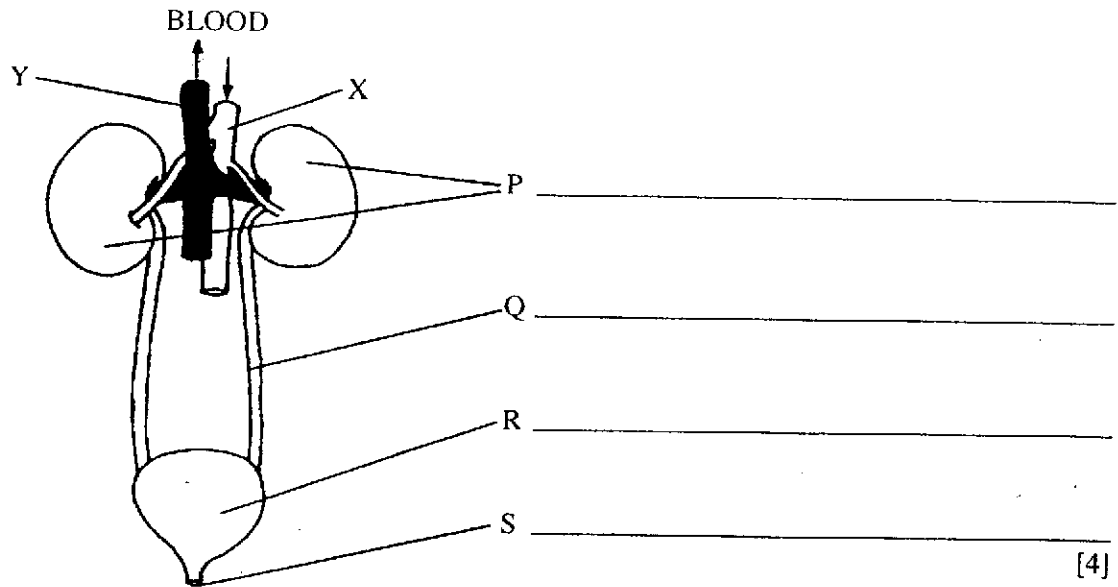
(e) (i) What kind of blood vessels carry blood away from the heart? _____

(ii) What kind of blood vessels carry blood to the heart? _____ [2]

Total Marks [10]

4. This diagram represents the human urinary system.

(a) Write the names of the parts of the diagram labelled P, Q, R and S.



[4]

(b) Name the blood vessels that carry blood from X into the part labelled P. _____ [1]

(c) The blood in Y has been filtered and wastes have been removed. To what body organ is the blood in Y now going? _____ [1]

(d) (i) Name the fluid that is made by the structure labelled P. _____

(ii) Name **two** substances normally found in this fluid.

_____ [3]

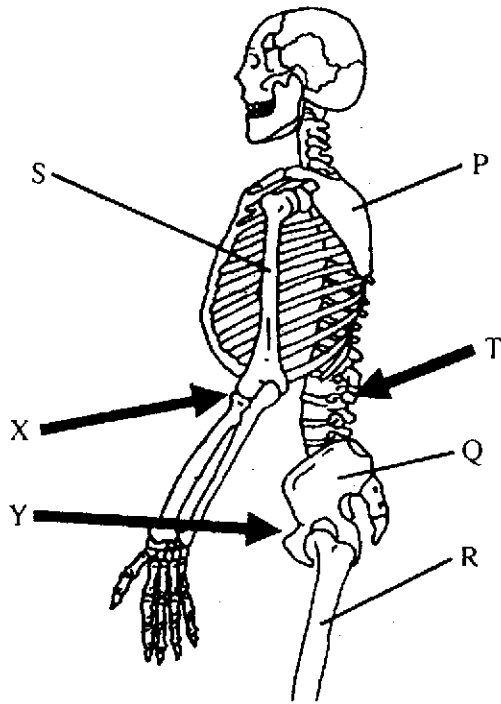
(e) What is the function of the structure labelled R on the diagram? _____

_____ [1]

Total Marks [10]

5. The diagram below shows part of the human skeletal system.

(a) Write the names of the bones labelled P, Q, R and S.



P _____
 Q _____
 R _____
 S _____

[4]

(b) What is the total number of bones that make up the skeletal system? _____ [1]

(c) On the diagram, T points to the backbone. What are the individual bones of the backbone called? _____ [1]

(d) On the diagram, X and Y point to two joints. Tell what type of joint each one is.

(i) Joint X _____

(ii) Joint Y _____

[2]

(e) Where is synovial fluid found and what is its function?

(i) Where it is found _____

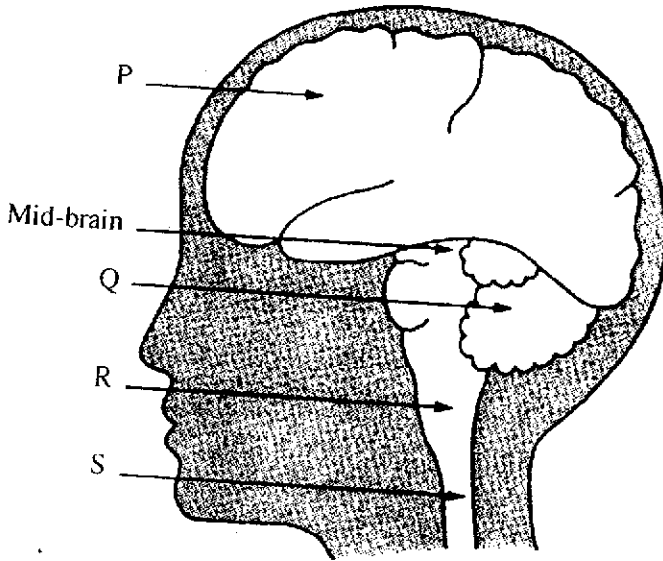
(ii) Function _____

[2]

Total Marks [10]

6. The diagram below shows the brain and other organs inside the human head.

(a) Write the names of the parts labelled P, Q, R and S.



P _____
 Q _____
 R _____
 S _____

[4]

(b) Name the **system** of the body to which the brain belongs. _____ [1]

(c) The brain is directly connected to sense organs by nerves. Name the sense organs that are connected to the brain by: (i) the auditory nerve, _____
 (ii) the optic nerve, _____ [2]

(d) Structure R on the diagram controls the body's **reflex actions**.

(i) What is a reflex action? _____

(ii) Give one example of a reflex action. _____ [2]

(e) What is a neuron? _____ [1]

Total Marks [10]

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