Name:	Target Grade:	Actual Grade:

BRIGHT CULTURE

NERVOUS SYSTEM AND THE EYE
MCQ and STRUCTURED QUESTIONS

READ THESE INSTRUCTIONS FIRST

INSTRUCTIONS TO CANDIDATES

1. Find a quiet, comfortable spot free place from distractions.

2. Spend one minute on each mark.

3. Time yourself for every single question.

4. Every chapter has their own question types. Ensure that you know the different question type for each chapter.

5. Make a conscientious effort to remember your mistakes, especially in terms of answering techniques. E.g Take a picture for the mistakes that you made, keep it in a photo album, and revise it over and over again.

6. Highlight question types that you tend to keep making mistakes and review them nearing exams.

7. Always review the common questions and question type that you tend to make mistakes nearing exams.

8. During exams, classify the question type and recall what you have learnt, how you need to analyse the questions for the different question type, what you need to take note of and answer with the correct answering techniques!

✨ **Wishing you all the best for this test!**

You've got this!

💡 **With lots of love,**
Bright Culture 💛

GOOD LUCK FOR YOUR EXAM!

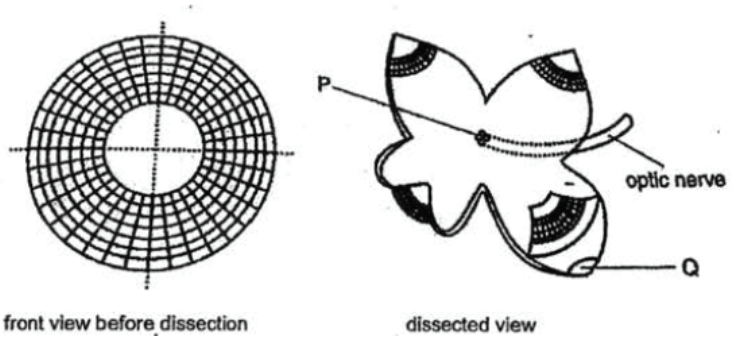
MARKS

NERVOUS SYSTEM AND THE EYE MCQ

1 Mydriasis is a condition in which the pupil is excessively dilated.
Which is a possible consequence of mydriasis?

A Cones will not be able to function optimally.
B He will not be able to see anything temporarily if he moves from a brightly lit place to a dark place.
C The image formed on the retina will not be focussed.
D The radial muscles of his iris will be contracted for extended periods of time.

2 A human eye was cut along the dotted line from its front view. The diagram shows the front view before dissection and the view of the dissected eye.



What are the labelled structures P and Q?

	P	Q
A	blind spot	cornea
B	blind spot	pupil
C	fovea	iris
D	iris	blind spot

3 What is the cell shown in the diagram?

A relay neurone
B motor neurone
C sensory neurone
D receptor neurone

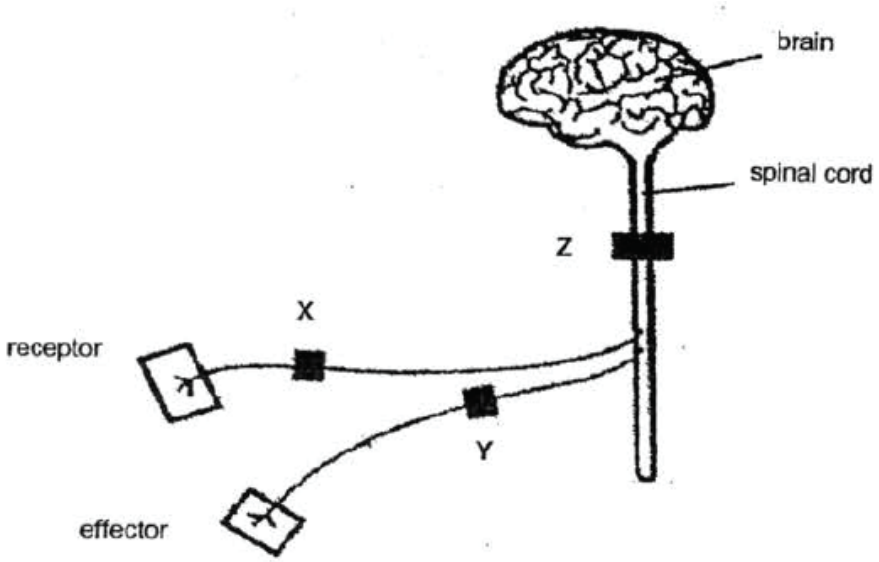
4 Sarin is colourless and odourless gas which is used as chemical weapon. Sarin interferes with the function of neurotransmitter in nervous tissue.

Which part of the cell will be inhibited by sarin gas?

A W
B X
C Y
D Z

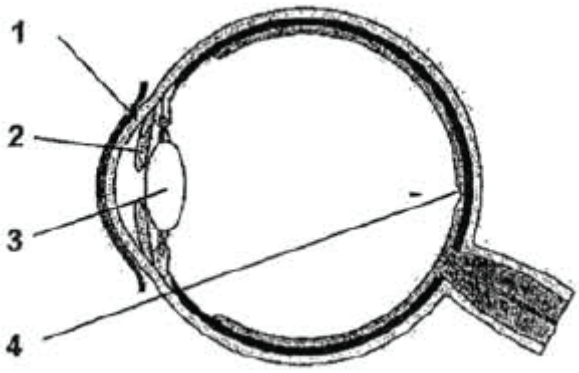
5 A local anaesthetic is a drug used to block nerve impulses in a specific part of the body. Figure below shows parts of the nervous system X, Y and Z which are possible sites where the anaesthetic can be injected. A person can feel a pin prick in his leg but he cannot move his leg.

Where was the anaesthetic injected in this person?



A at X
B at Y
C at Z
D at X and Y

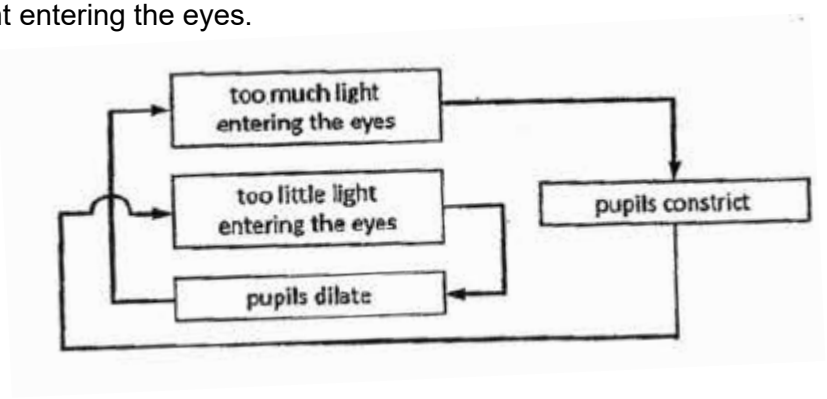
6 The diagram shows a section through an eye.



In the pupil reflex, which are the sites of the effector and the receptor?

	Effector	receptor
A	2	1
B	3	1
C	3	4
D	2	4

7 The diagram refers to the control of pupil size in the eyes in response to the amount of light entering the eyes.



Why is this a negative feedback system?

A It decreases the amount of light entering the eyes.
B It increases any change in the amount of light entering the eyes.
C It increases the amount of light entering the eyes.
D It reverses any change in the amount of light entering the eyes.

NERVOUS SYSTEM AND THE EYE STRUCTURED QUESTIONS

1 Fig. 26.1 shows the horizontal section of the human eye.

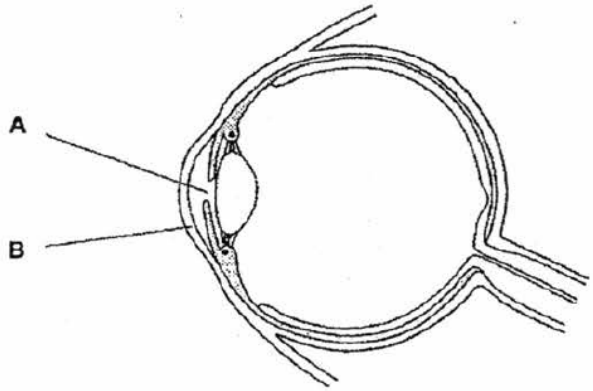


Fig. 26.1

(a) **(i)** Identify structures A and B.

A ……..

B …….. [2]

(ii) Describe what happens to structure A when a person moves from a bright field into a dark room.

……

……[1]

(iii) Place a letter Z on Fig. 26.1 where a response occurs as a result of a reflex action. [1]

(b) In some individuals, the retina becomes completely detached from the tissues beneath.

Explain how this will affect their ability to see.

……

……

……

……

……

……[3]

(c) As people get older, cloudy (opaque) patches sometimes form in the lens of the eye. These are called cataracts.

Suggest how cataracts might affect the ability of the lens to carry out its function.

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……

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……[3]

[Total: 10]

2 Fig.6.1 shows the eye of Patient A having an eye examination, and after a few drops of atropine had been applied to his eye.

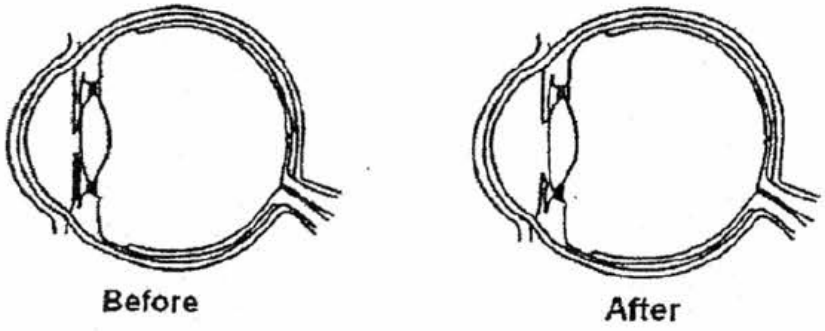

Fig.6.1

(a) Describe the effect of atropine and how it would aid the doctor in examining the internal structures of the patient's eye.

……

……

……

……[2]

(b) Explain why Patient A was advised to put on a pair of sunglasses until the effects of atropine wears off?

……

……

……

……[2]

(c) Patient A was at a bus stop and he observed a bus approaching him from a distance. Describe how eyes respond to this change.

……

……

……

……[2]

(d) Patient B has a condition known as astigmatism. The appearance of his eye is shown in Fig.6.2.

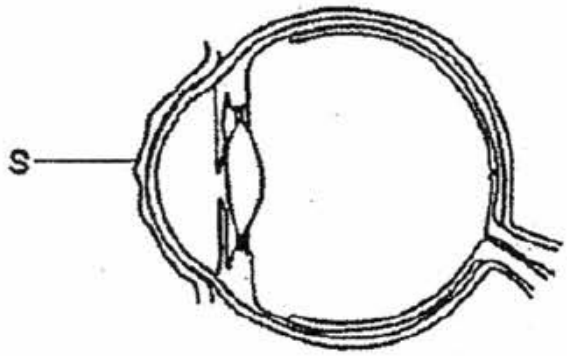

Fig.6.2

With reference to structure S, explain how Patient B's vision is affected as a result of astigmatism.

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.....

.....[3]

ANSWERS FOR NERVOUS SYSTEM AND THE EYE MCQ

Q1: D
Q2: A
Q3: B
Q4: D
Q5: B
Q6: D
Q7: D

ANSWERS FOR NERVOUS SYSTEM AND THE EYE STRUCTURED QUESTIONS

1 Fig. 26.1 shows the horizontal section of the human eye.

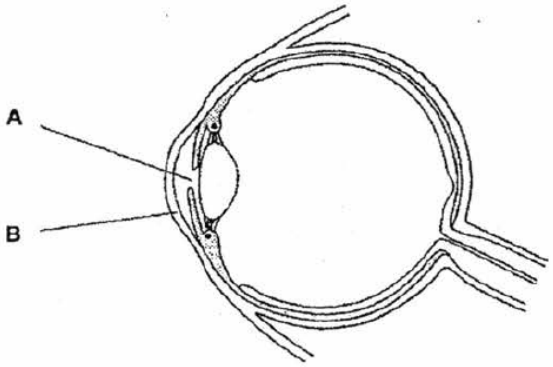


Fig. 26.1

(a) **(i)** Identify structures A and B.

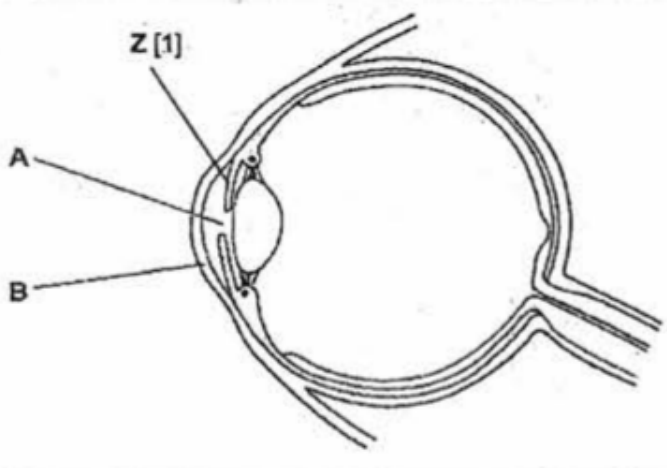
A pupil

B cornea [2]

(ii) Describe what happens to structure A when a person moves from a bright field into a dark room.

A dilates when light becomes less intense [1]

(iii) Place a letter Z on Fig. 26.1 where a response occurs as a result of a reflex action. [1]



(b) In some individuals, the retina becomes completely detached from the tissues beneath.

Explain how this will affect their ability to see.

Reasonable reference to light receptors/sensitive cells/rods/cones;
Not in contact with optic nerve;
No impulses;
To brain;
No picture formed/blindness/unable to see

(Reject: Blurred vision or reduced visionary power)
Less/no nutrition for retina;
Max 3 [3]

(c) As people get older, cloudy (opaque) patches sometimes form in the lens of the eye. These are called cataracts.

Suggest how cataracts might affect the ability of the lens to carry out its function.

Failure to focus (all) light (rays);
Blurred Image AW;

Any reference to the passage of light rays being Impaired
(eg. Reflection/refraction/deflection/absorption/convergence);

Ref. possible change in elasticity/ability to accommodate;
Faded colour vision;
Max 3 [3]

[Total: 10]

2 Fig.6.1 shows the eye of Patient A having an eye examination, and after a few drops of atropine had been applied to his eye.

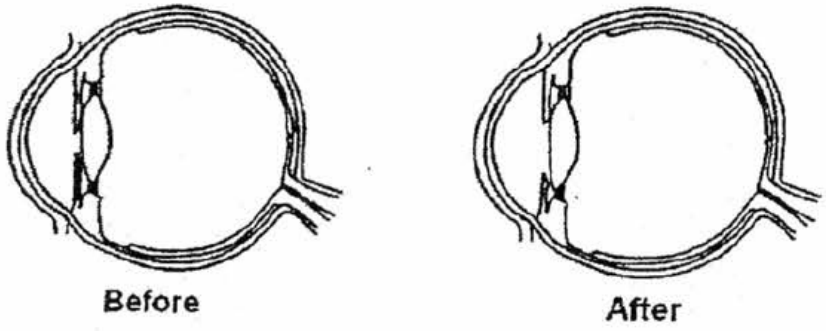


Fig.6.1

(a) Describe the effect of atropine and how it would aid the doctor in examining the internal structures of the patient's eye.

Atropine acts on the muscles of the iris or circular muscles of iris to relax and radial muscle to contract) to cause the pupil to dilate;

this allows more light to enter the eye for examination; [2]

(b) Explain why Patient A was advised to put on a pair of sunglasses until the effects of atropine wears off?

If the pupil is dilated, too much light may enter and hence the retina may be damaged;
thus the sunglasses serve to limit/decrease the amount of light entering the eye; [2]

(c) Patient A was at a bus stop and he observed a bus approaching him from a distance. Describe how eyes respond to this change.

As the bus approaches him, ciliary muscles contract and suspensory ligaments slacken;
lens becomes thicker and more convex; [2]

(d) Patient B has a condition known as astigmatism. The appearance of his eye is shown in Fig.6.2.

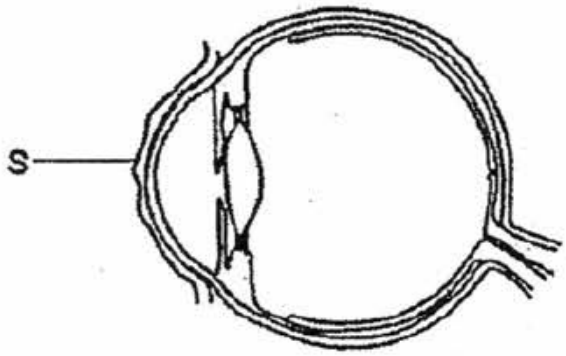


Fig.6.2

With reference to structure S, explain how Patient B's vision is affected as a result of astigmatism.

Structure S has an irregular shape/uneven surface/ not smooth WTTE;

causing the light entering the eye to be bend irregularly/ light entering the eye are refracted in many directions; WTTE

and not be focused on the retina, causing blurry vision; [3]