Province of the   
EASTERN CAPE   
EDUCATION

DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)   
 HOME SCHOOLING SELF-STUDY WORKSHEET

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SUBJECT | LIFE SCIENCES | GRADE | 12 | DATE | 27 May 2020 |
| TOPIC | Human nervous system:  (Structure of the human eye) | TERM 1  REVISION |  | TERM 2  CONTENT |  |
| TIME  ALLOCATION | 1 hour | TIPS TO KEEP HEALTHY  1. WASH YOUR HANDS thoroughly  with soap and water for at least 20  seconds. Alternatively, use hand  sanitizer with an alcohol content of at  least 60%.  2. PRACTICE SOCIAL DISTANCING -  keep a distance of 1m away from other  people.  3. PRACTISE GOOD RESPIRATORY  HYGIENE: cough or sneeze into your  elbow or tissue and dispose of the tissue  immediately after use.  4. TRY NOT TO TOUCH YOUR FACE.  The virus can be transferred from your  hands to your nose, mouth and eyes. It  can then enter your body and make you  sick.  5. STAY AT HOME. | | | |
| INSTRUCTIONS | Use Mind The Gap  Study Guide and read:   5.1 Key  concepts pg.  27-28 and   5.2 Genetic  Crosses pg. 29  Answer the questions  on the Worksheets  below |

**WORKSHEET 3**

**The Human Eye**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1.1 | Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A to D) next to the question numbers (1.1.1 to 1.1.4) **Circle on the correct response**. | | | |
|  | 1.1.1 | Which structures in the eye are responsible for the refraction of light? | | |
|  |  | A | Blind spot and yellow spot. |  |
|  |  | B | Pupil and iris. |  |
|  |  | C | Cornea and lens. |  |
|  |  | D | Sclera and suspensory ligaments. | (1) |
|  | 1.1.2 | Which ONE of the following parts of the eye contains the photoreceptors? | | |
|  |  | A | Retina |  |
|  |  | B | Iris |  |
|  |  | C | Sclera |  |
|  |  | D | Vitreous humour | (1) |
|  | 1.1.3 | Which ONE of the following is the dark-coloured layer of the eye, which is rich in blood vessels? | | |
|  |  | A | Conjunctiva |  |
|  |  | B | Sclera |  |
|  |  | C | Cornea |  |
|  |  | D | Choroid | (1) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1.1.4 | The diameter of a person’s pupil was measured over time. The results are shown below. | | | |
|  |  |  | | | |
|  | During which time did the light intensity increase the fastest? | | | | |
|  | A | 5 – 10 s | |  | |
|  | B | 15 – 30 s | |  | |
|  | C | 35 – 45 s | |  | |
|  | D | 55 – 60 s | | (1)  **(4)** | |
| 1.2 | Study the diagram and then answer the questions that follow. Write the answer on space provided on right margin. | | | | |
|  | **A**  **B**  **C**  **D**  **E**  **G**  **F**  **H**  ***Longitudinal section through a human eye*** | | | | |
|  | 1.2.1 | Identify part C.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | (1) | |
|  | 1.2.2 | Write the **letter** of the part of the eye: | | **Answer** | |
|  |  | (i) | That is transparent and plays an important role in  accommodation | (1) | **\_\_\_** |
|  |  | (ii) | That helps the eye to maintain its shape | (1) | **\_\_\_** |
|  |  | (iii) | That causes the lens to change its shape | (1) | **\_\_\_** |
|  |  | (iv) | That responds to light intensity | (1) | **\_\_\_** |
|  |  | (v) | That prevents internal reflection of light | (1) | **\_\_\_** |
|  | 1.2.3 State TWO differences between part A and part F.   |  |  | | --- | --- | | **Part A** | **Part F** | |  |  | |  |  |   (4)  **(10)** | | | | |
| 1.3 | Study the following diagram and graph and answer the questions that follow. | | | | |
|  | **A**  **B**  **C**  **D**  **G**  **E**  **F**  ***Section through the human eye*** | | | | |
|  | 1.3.1 State TWO properties common to parts A and B and state the significance of each property.  Common properties: (2)  Significant Part A:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2)  Significant Part B:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2) | | | | |
|  | 1.3.2 | Explain TWO ways in which part E is suited for its function. | | (4) | |
|  | 1.3.3 | Write the **LETTER** and **NAME** of the part that will make adjustments when a person moves from a brightly lit room into a dark room.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | (2) | |
|  | 1.3.4 | Name any TWO structures, not shown on the diagram, which help in the protection of the eye. | | (2) | |
|  | 1.3.5 | Which **NUMBER** on the graph represents G on the diagram? Explain your answer. | | (2) | |
|  | 1.3.6 | Which area of part D on the diagram is shown at number 2 on the graph? Explain your answer. | | (2)  **(18)** | |
| 1.4 | Study the diagram below and answer the questions that follow. | | | | |
|  | **A**  **B**  **C**  **D**  **I**  **H**  **G**  **F**  **E**  **Structure of the human eye**  **J** | | | | |
|  | 1.4.1 | Identify each of the following parts: | | (1)  (1)  (1) | |
| (a) | E\_\_\_\_\_\_\_\_\_\_\_\_ |
| (b) | F\_\_\_\_\_\_\_\_\_\_\_\_ |
| (c) | J\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | 1.4.2 | Choose the **letter(s)** of the part(s) which: | | (3) | |
| (a) | Undergo a change when the intensity of the light changes\_\_\_\_\_\_\_ |
| (b) | Undergo a change when the distance of the object from the eye change\_\_\_\_\_\_ |
| (c) | Lead to total blindness if it is non-functional\_\_\_\_\_\_\_ |
|  | 1.4.3 | Explain your answer to QUESTION 1.4.2 (c)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | (2) | |
|  |  |  | | **(8)** | |

**TOTAL 40 MARKS**