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DIRECTORATE SENIOR CURRICULUM MANAGEMENT
(SEN-FET)

HOME SCHOOLING SELF-STUDY WORKSHEET ANSWER SHEET

SUBJECT	LIFE SCIENCES	GRADE	12	DATE	1 June 2020
TOPIC	HUMAN EAR – STRUCTURE AND FUNCTION	TERM 1 REVISION		TERM 2 CONTENT	✓

LEARNER ACTIVITY: EAR STRUCTURE AND FUNCTION

QUESTION 1

1.1

- 1.1.1 Eustachian tube✓ (1)
 - 1.1.2 Pinna✓ (1)
 - 1.1.3 Cerumen✓ (1)
 - 1.1.4 Stirrup✓ (1)
 - 1.1.5 Ampulla✓ (1)
- (5)**

1.2

- 1.2.1 None ✓✓ (2)
 - 1.2.2 B only ✓✓ (2)
- (4)**
- [9]**

QUESTION 2

2.1

- 2.1.1 (a) 1 – Semicircular canals✓
 - Have receptors for balance that convert stimulus into impulse✓
 - /responsible for balance (2)
- (b) 2 - Cochlea✓
 - Has receptors for hearing that convert sound waves into impulses✓ (2)

- (c) 3 - Tympanic membrane✓
Transmits sound waves to the middle ear✓ (2)
- (d) 4 - Ossicles
Transmit vibrations from the tympanic membrane to inner ear✓
Amplify sound vibrations✓ (3)
- (e) 5 – Auditory nerve✓
Transmits impulses to the brain✓ (2)
- 2.1.2 Cerebrum✓ (1)
- 2.1.3 Sensory✓neuron (1)
- 2.1.4 Allows ossicles/tympanum to vibrate freely✓ (1)
- 2.1.5 Pharynx✓ (1)
- 2.1.6 Auditory canal✓ (1)
- 2.1.7 The ear wax can be removed✓ from the auditory canal
to allow sound to reach the tympanic membrane✓ /which will allow the
tympanic membrane to vibrate freely (2)
- (18)

QUESTION 3

3.1

- 3.1.1 Diagram of the middle ear ✓ (1)
- 3.1.2 A – Hammer✓ (malleus)
D – Oval window✓ (2)
- 3.1.3 - Yawning or swallowing opens the eustachian tube✓
- air enters into the middle ear✓
- equalizing pressure on both side of the tympanic membrane✓ any 2 (2)
- 3.1.4 C/ the tympanic membrane is larger / larger surface area
- than D/ the oval window✓ /smaller surface area
- Therefore the incoming sound waves are concentrated on to a smaller area✓
thus amplifying the sound (3)

(8)

[35]