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METRO NORTH EDUCATION DISTRICT

LIFE SCIENCES P1

GRADE 12

MARKING GUIDELINE

COMMON EXAMINATION

SEPTEMBER 2024

MARKS: 150

TIME: 2 1/2 hours

This exam paper consists of 10 pages.





PRINCIPLES RELATED TO MARKING LIFE SCIENCES

- 1. If more information than marks allocated is given**
Stop marking when maximum marks is reached and put a wavy line and 'max' in the right-hand margin.
- 2. If, for example, three reasons are required and five are given**
Mark the first three irrespective of whether all or some are correct/incorrect.
- 3. If whole process is given when only part of it is required**
Read all and credit relevant part.
- 4. If comparisons are asked for and descriptions are given**
Accept if differences / similarities are clear.
- 5. If tabulation is required but paragraphs are given**
Candidates will lose marks for not tabulating.
- 6. If diagrams are given with annotations when descriptions are required**
Candidates will lose marks
- 7. If flow charts are given instead of descriptions**
Candidates will lose marks.
- 8. If sequence is muddled and links do not make sense**
Where sequence and links are correct, credit. Where sequence and links is incorrect, do not credit. If sequence and links becomes correct again, resume credit.
- 9. Non-recognised abbreviations**
Accept if first defined in answer. If not defined, do not credit the unrecognized abbreviation but credit the rest of answer if correct.
- 10. Wrong numbering**
If answer fits into the correct sequence of questions but the wrong number is given, it is acceptable.
- 11. If language used changes the intended meaning**
Do not accept.
- 12. Spelling errors**
If recognizable accept provided it does not mean something else in Life Sciences or if it is out of context.
- 13. If common names given in terminology**
Accept provided it was accepted at the National memo discussion meeting.

14. **If only letter is asked for and only name is given (and vice versa)**
No credit
15. **If units are not given in measurements**
Candidates will lose marks. Memorandum will allocate marks for units separately
16. Be sensitive to the **sense of an answer, which may be stated in a different way.**
17. **Caption**
All illustrations (diagrams, graphs, tables, etc.) must have a caption
18. **Code-switching of official languages (terms and concepts)**
A single word or two that appears in any official language other than the learners' assessment language used to the greatest extent in his/her answers should be credited, if it is correct.

1.5	1.5.1		
	(a)	Motor ✓ neuron	(1)
	(b)	Sensory ✓ neuron	(1)
	1.5.2	Cell body ✓	(1)
	1.5.3		
	(a)	B ✓	(1)
	(b)	A ✓	(1)
	1.5.4	II ✓	(1)
			(6)

TOTAL SECTION A: 50

SECTION B

QUESTION 2

- 2.1 2.1.1 B - ossicles ✓
C – Oval window ✓ (2)
- 2.1.2 A ✓ Tympanic membrane ✓ / **Tympanum/Eardrum** (2)
- 2.1.3 Absorbs excess (pressure waves) ✓ from the inner ear/ prevents echo (1)
- 2.1.4 - The person will suffer from hearing loss ✓ * / be deaf because
- pressure will not be equalised on either side of the tympanic membrane ✓
- no/less vibrations in the middle ear ✓ / ossicles
Compulsory mark ✓* + Any 2 (3)
- 2.1.5 - tympanic membrane/Part A vibrates and transmits the vibrations to the ossicles in the middle ear
- the ossicles amplify the vibrations to the oval window
- pressure waves will form in the cochlea/inner ear
- receptors in the Organ of the Corti/hair cells are stimulated
- Any 6 (6)
(14)
- 2.2 2.2.1 - Stimulates ovulation ✓ (**description of ovulation**)
- Stimulates the formation of the Corpus luteum ✓ (2)
- 2.2.2 - The increase in oestrogen ✓
- caused an increase in the thickness ✓ of the endometrium (2)
- 2.2.3 increase in hormone B/ progesterone:
- is to maintain the lining of the endometrium ✓
- for implantation ✓ / pregnancy (2)
- 2.2.4 high levels of hormone B
- inhibits the pituitary gland ✓ from secreting FSH
- so that no new follicle is formed ✓
- preventing ovulation ✓ (3)
(9)
- 2.3 2.3.1 (a) Epididymis ✓ (1)
- (b) Urethra ✓ (1)



- 2.3.2 - Part A/ acrosome **contains enzymes** ✓
- that digest the outer membrane of the ovum ✓ (2)
- 2.3.3 - it is alkaline ✓
to neutralize the acidic conditions of the vagina ✓
- it contains mucus ✓ / provides medium
to facilitate the movement of the sperm ✓
it contains nutrients ✓
- to supply the sperm with energy ✓
(Mark first ONE only) Any (1 X 2) (2)
- 2.3.4 + ✓
- | Gametogenesis in males | Gametogenesis in females |
|---|---|
| Called spermatogenesis ✓ | Called oogenesis ✓ |
| Stimulated by testosterone ✓ | Stimulated by FSH |
| Takes place in the testes ✓ /
seminiferous tubules | Takes place in the ovaries /
follicles |
| Results in 4 sperm cells
being produced ✓ | Results in 1 ovum being
produced |
| Process starts at puberty ✓ | The process starts before
puberty / at birth |
- (Mark first TWO only)** (5)
(11)
- 2.4 2.4.1 (a) F ✓ Corpus callosum ✓ (2)
(b) B ✓ Cerebellum ✓ (2)
(c) E ✓ Pituitary gland ✓ / Hypophysis (2)
- 2.4.2 - Cranium ✓ Meninges ✓ [cerebrospinal fluid] (2)
- 2.4.3 (a) Cerebrum ✓ (1)
(b) – The medulla oblongata that controls heartrate ✓
- that is not affected ✓ by the concussion (2)
(11)
- 2.5 - The zygote divides by mitosis ✓
- To form a ball of cells ✓ called the morula
- The morula divides mitotically ✓
- To form a hollow ball of cells ✓
- Known as a blastocyst/blastula ✓ [NOT blastocyte]
- The blastocyst is implanted in the endometrium ✓ Any (5)
[50]

QUESTION 3

- 3.1 3.1.1 Internal fertilization (1)
- 3.1.2 - Sperm are deposited inside the female body
thereby increasing the chances of fertilisation
- Gametes/zygotes are inside the body
therefore protected from predators / environmental dangers
(Mark first ONE only) (2)
- 3.1.3 - The eggs hatched inside the female's body
- and the young are born live (2)
(5)
- 3.2 3.2.1 - (Eye) accommodation✓ (1)
- 3.2.2 - lens is transparent✓
To allow light to pass through✓
- lens is biconvex✓
For refraction of light✓
- The lens is elastic✓and
can change shape/convexity✓
(Mark first TWO only) Any (2X2) (4)
- 3.2.3 The (central) diameter of the lens decreases as the distance of
the object from the eye increases.✓✓ (2)
- 3.2.4 - It is more convex✓
- so that light rays are refracted/bent more✓
- to form a clear image on the retina✓/ to focus on the retina (3)
(10)
- 3.3 3.3.1 (a) Diabetes ✓ mellitus (1)
- (b) – The pancreas of this person produces low
levels of insulin ✓/cells are insulin resistant
- blood glucose is not converted to glycogen✓/glucose
is not absorbed into the cells (2)
- 3.3.2 $13 - 4$ ✓ (2)
 $= 9$ ✓
- 3.3.3 - Glucagon✓
- Adrenalin✓ (2)
(7)
- 3.4 3.4.1 - Will creatine supplementation have an effect on the levels of
testosterone in the blood of weightlifting males?✓✓ (2)
- 3.4.2 Weightlifters were:
- healthy✓
- same age✓



- same diet ✓
 - same training routine ✓
 - (Mark first TWO only)** Any 2 (2)
- 3.4.3 - 100 ✓ men were used
- investigation was done for 8 weeks ✓ (2)
- 3.4.4 - Testosterone levels in the blood were measured ✓
- before the administering of the creatine supplement ✓ (2)
- 3.4.5 The creatine supplement had no effect on the levels of testosterone in the blood of weightlifting males. ✓✓ (2)
- 3.4.6 - stimulates puberty ✓
- stimulates formation of sperm cells ✓ (2)
(12)
- 3.5 3.5.1 Diagram M ✓ (1)
- 3.5.2 - Blood vessels are constricted ✓ / vasoconstriction occurred
- Less blood flows to the skin surface ✓
- Heat is retained / less or no heat is lost ✓ (3)
- 3.5.3 - Sweat gland becomes more active ✓
- More sweat is produced ✓
- and transported to the surface of the skin ✓ (3)
(7)
- 3.6 3.6.1 Geotropism ✓ (1)
- 3.6.2 Auxins ✓ (1)



3.6.3 - Due to gravity✓
- there is a higher concentration of auxins on the lower side✓ of the stem
- which stimulates growth✓
- therefore, growth will occur mainly on the lower side✓
- causing the stem to grow/bend upwards✓ (5)

3.6.4 - The leaves of the stem will receive more sunlight✓/face the sunlight
- for more photosynthesis✓
OR
- Exposes the flowers more favourably✓
- for pollination✓/seed dispersal
(Mark first ONE only) Any (1X2) (2)
(9)

TOTAL SECTION 100

B:

150

TOTAL:

