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GRADE 12
Marking guideline

ASSIGNMENT: Term 3
Total: 100

QUESTION 1

- 1.1.1 The eyes are still closed✓
The body is still naked, without a downy feather covering✓ (2)
- 1.1.2 The embryo is directly connected to the mother✓ as it receives nutrients through the placenta✓ which consists of embryonic and maternal tissues. (2)
- 1.1.3 The development time is longer✓ in hatchling B, therefore more yolk will be needed to supply nourishment to the developing embryo.✓ (2)
(6)
- 1.2.1 (a) Diagram 1✓ (1)
(b) Diagram 2✓ and 3✓ (2)
(c) Diagram 1✓ and 2✓ (2)
- 1.2.2 Amniotic egg ✓ (1)
(6)
- 1.3.1 oviparous✓ (1)
- 1.3.2 eggs are laid✓ in the nest. (1)
- 1.3.3 (a) the graph will decrease more slowly✓ at the beginning/ not decrease as quickly at the beginning / more convex. (1)
(b) the offspring are protected✓ by the parents for a longer period of time. Therefore, more of them will survive✓ to become adults. (2)
(5)

QUESTION 2

- 2.1.1 - the endocrine disrupters✓/ malfunctioning of the endocrine glands
- Life style✓/ life style variation/ driving vehicle for prolonged periods (2)
- 2.1.2 - long distance drive extends the period sitting at a fixed position causing male reproductive organ to remain tightly squeezed between the thighs for a considerable period of time ✓.
- As the temperature rises ✓in the area, the scrotum is unable to pull the testis away from the body due to lack of spacing,
- hence the testes remain in contact with the body and maintain a higher temperature causing a disruption of spermatogenesis✓. (3)

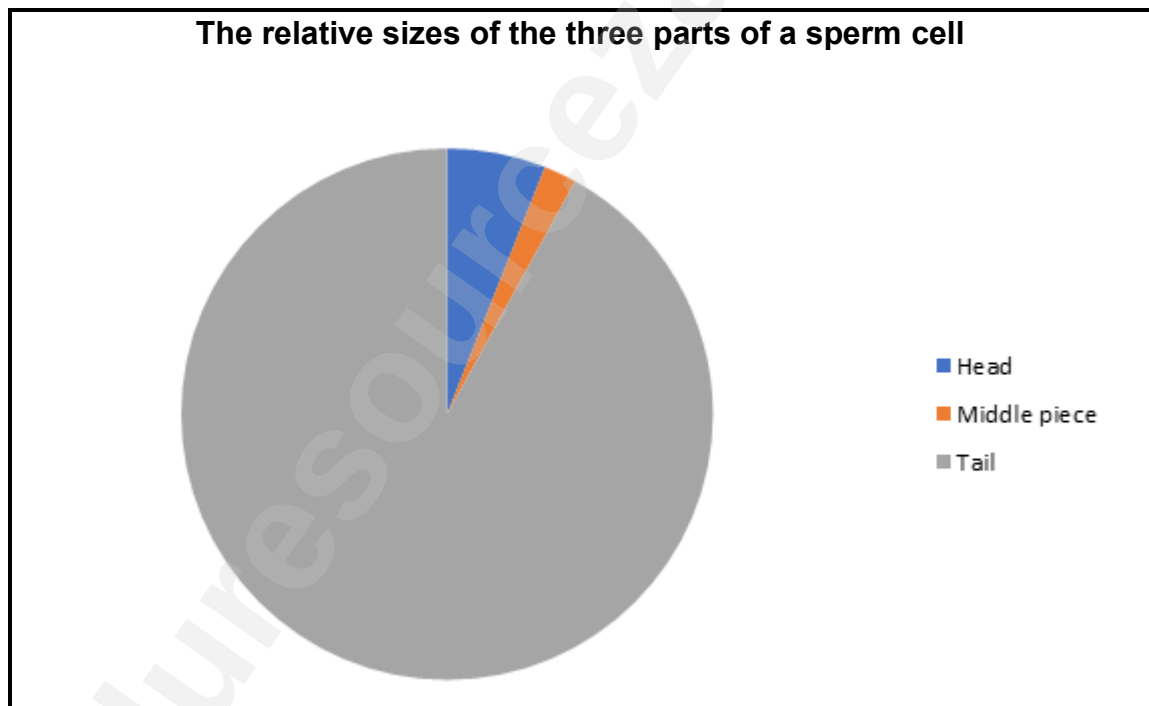
2.1.3 the low sperm count reduces the chances of fertilisation ✓ and may lead to male infertility ✓. (2)

2.1.4 Use of very tight underwear ✓.
Sitting in a hot water tub for a long time as daily routine ✓ (Any 1 x 1) (1)

2.1.5 Head: $\frac{3}{50} \times 360^\circ$
 $= 21.6^\circ \approx 22^\circ$

Middle piece: $\frac{1}{50} \times 360^\circ$
 $= 7.2^\circ \approx 7^\circ$

Tail: $\frac{46}{50} \times 360^\circ$ [50 – (3 + 1)]
 $= 331.2^\circ \approx 331^\circ$



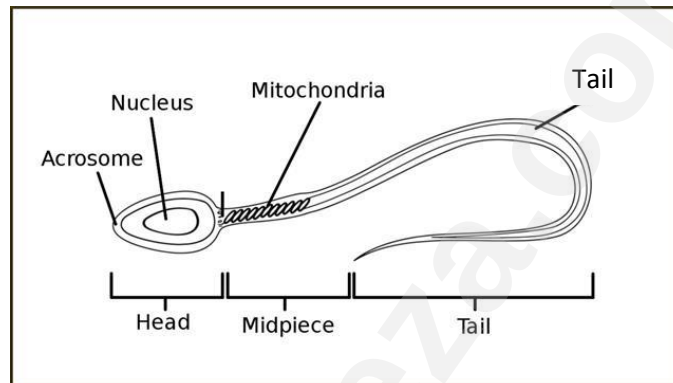
MARK ALLOCATION FOR THE PIE CHART	
Criteria	Mark
Title of graph – both variables included (H)	1
Draw the correct type of graph (T)	1
1 – 2 Sectors correctly indicated/labelled (P)	1
3 Sectors correctly indicated/labelled	2

1 – 2 sectors correctly calculated (C)	1
3 Sectors correctly calculated	2
Key/Sectors labelled (Must have head, middle piece and tail) (L)	1

(7)

2.1.6

Diagram showing the structure of a sperm cell



Criteria	Mark
Heading Provided	1
Diagram of sperm drawn correctly	1
4 correct labels provided	4
<u>TOTAL</u>	6

(6)
(21)

2.2

2.2.1 (a) 1981 – 1990 ✓

(1)

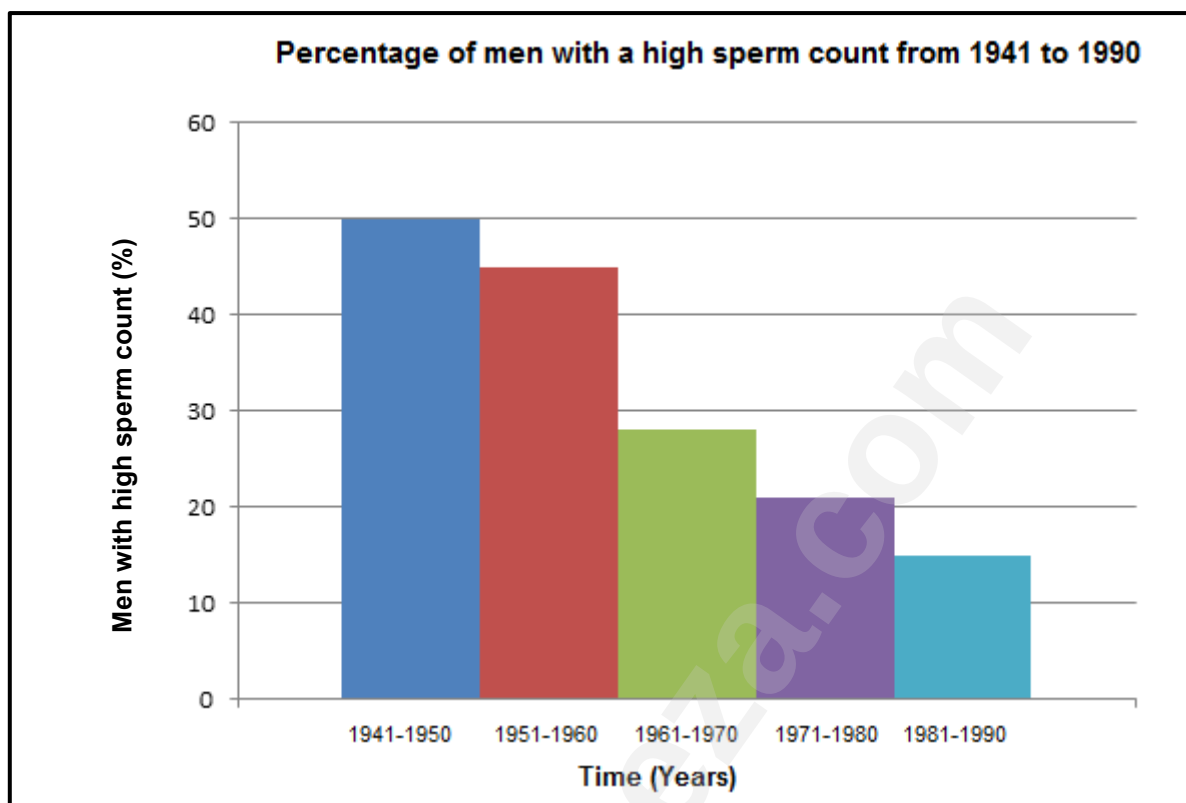
(b) 1981 - 1990 ✓

(1)

2.2.2 % increase = $\frac{4 \times 100}{14}$ ✓
= 28,5% ✓

(2)

2.2.3



Criteria	Mark allocation
Histogram drawn (T)	1
Title of graph (C)	1
Correct scale for X and Y-axes. (Bars must be the same width) (S)	1
Correct label and unit for X axis and Y axis (L)	1
Plotting of bars (P)	0: No bars plotted correctly 1: 1 to 3 bars plotted correctly 2: All bars plotted correctly

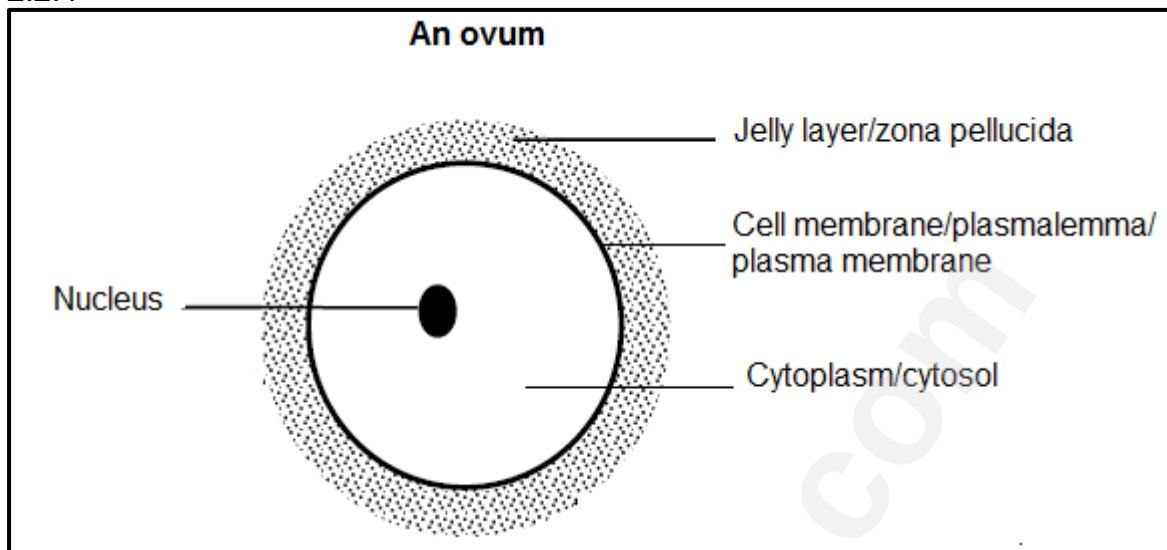
(6)

NOTE:

If a line graph is drawn – marks will be awarded for the “title and labels for X and Y axis” only

If a bar graph is drawn – marks will be lost for the “type of graph and correct scale” only

2.2.4



Marking rubric of the diagram:

Caption of the diagram	1
One mark per label	4

(5)

2.2.5 Differences between structure of the sperm and ovum cell

Sperm Cell	Ovum Cell
Has acrosome✓	No acrosome✓
Has middle piece✓	No middle-piece✓

Mark for T

(Any 1 x 2) (3)

QUESTION 3

3.1.1 It acts as a micro-filter✓ prevents harmful substances from reaching the foetus.

It secretes progesterone ✓/ oestrogen during pregnancy
Immunity is transferred from the mother to the foetus✓.

(MARK FIRST TWO ONLY)

(Any 2) (2)

3.1.2

BLOOD VESSEL C	BLOOD VESSEL D
High concentration of nutrients✓/ example of nutrients.	Low concentration of nutrients✓/ example of nutrients.
Low concentration of waste products✓ / example of waste products.	High concentration of waste products✓/ examples of waste products.
High concentration of oxygen✓	Low concentration of oxygen✓

Low level of carbon dioxide✓

High level of carbon dioxide✓.

MARK FIRST TWO ONLY

Table:(1) and (Any 2 x 2) (5)

3.1.3 Waste products / nitrogenous waste/ carbon dioxide will accumulate✓ in the foetus' body causing the death of the foetus✓ (2)

3.1.4 Harmful substances/ bacteria✓

May pass from the mothers' blood to the blood of the foetus ✓

OR

The blood type✓/ other proteins of the mother and baby may not be compatible✓.

(2)

(11)

3.2.1 FSH✓/ Follicle Stimulating hormone

(1)

3.2.2 The follicle decreased in size ✓
as ovulation had taken place✓
the resulting corpus luteum became smaller✓
because fertilisation did not take place✓

(Any 3)

(3)

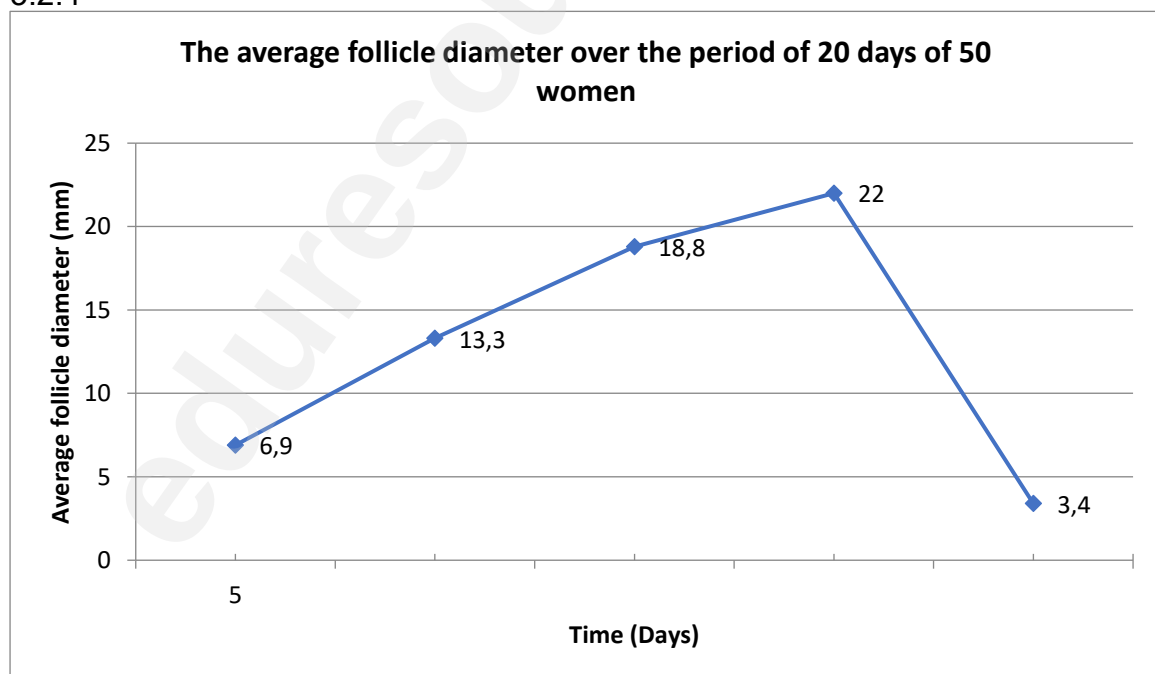
3.2.3 Progesterone✓

Oestrogen✓

(any order)

(2)

3.2.4



(6)

(12)

3.3.1 pituitary gland✓/ hypophysis

(1)

- 3.3.2 high level of LH✓
stimulates ovulation✓ (2)
- 3.3.3 to monitor their fertile periods✓
to prevent pregnancy✓/ to increases chances of falling pregnant (2)
- 3.3.4 oestrogen✓
level rises✓ (2)
- 3.3.5 between day 16 ✓and 18 ✓ (2)
- 3.3.6 progesterone only rises✓
after ovulation✓
this shows that the fertility period has already passed✓/ when
fertility is low (3)
(12)
- 3.4**
- 3.4.1 (a) Time✓ (1)
(b) Average age of first menstruation✓ (1)
- 3.4.2 Decide on sample size
Decide on proportion from racial groups✓
Decide on the age range of participants✓
Decide on proportions from socio-economic status of sample✓
Decide on the recording tool✓/instrument/ method
Decide on proportions from socio-economic status of sample✓
Ask permission ✓from participants (3)
(MARK FIRST THREE)
- 3.4.3 the hypothesis will be rejected✓/ not accepted
and therefore, needs to be reformulated. ✓ (2)
- 3.4.4 Breast develop✓
Development of pubic hairs ✓ (2)
(MARK FIRST TWO)
- (9)**
[100]