

B2.3 Reproduction, Fertility & Contraception Answers

1. (a) (i) In oviduct; A [1]
- (ii) Fertilisation; [1]
- (iii) Mitosis; [1]
- (iv) Uterus (lining); [1]
- (v) Any **two** from:
 • Oxygen
 • Antibodies
 • Glucose
 • Amino acids
 • Vitamins
 • Minerals
 • Hormones
 (Accept named dissolved nutrients but **not** nutrients on its own) [2]
- (vi) Any **one** from: B
 Brain damage/foetal alcohol syndrome/low birth weight/blindness/
 visual problems [1]
 Learning difficulties
- (vii) Increase price of alcohol/more education about alcohol/targeted
 advertising; [1]
- (b) Oestrogen; Ovaries; Any **two** from:
 • Breast (development)
 • growth of pubic hair
 • (onset of) menstruation
 • hips widen [4]

AVAILABLE MARKS

12

B2 F14

2. (a) 1-5 C [1]
- (b) ovulation;
 egg released **from the ovary**; [2]
- (c) remains thick/doesn't come away/doesn't break down F16 [1]

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4

3. (a) umbilical cord D [1]
- (b) (i) **function**: exchange of materials (named with correct direction)
adaptation: large surface area/folding/villi/good blood supply/thin [2]
- (ii) carbon dioxide/urea [1]
- (c) amnion/amniotic fluid/amniotic sac F16 [1]

5

4.

(a) (i)

Secondary sexual characteristics	Males	Females	Both
Growth of breasts		✓	
Growth of pubic hair			✓
Voice deepens	✓		
Hips widen		✓	

(E)

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(ii) Testes – testosterone;
Ovaries – oestrogen;

[2]

(iii) Haploid/23 chromosomes;
restores diploid number in zygote/to give 46 chromosomes;
or
tail;
swim (to egg);

[2]

(b) oviduct;
mitosis;
uterus;
foetus;
amniotic fluid;
placenta;

(F)

[6]

(c) **Indicative content**

Any **three** correct methods named:

- Rhythm method/abstinence
- Femidom/female condom
- (Hormone) implant/**hormone** injection
- Coil
- (Contraceptive) pill
- **Morning after** pill
- Condom
- Diaphragm/cap
- Vasectomy/sterilisation
- Female sterilisation

(G)

Explanations:

(Condom)

– prevents **sperm meeting egg/getting into** *oviduct*

Not stops sperm getting into body (Pill)/(hormone implant)

– prevents ovulation;

(Vasectomy)

– sperm ducts cut/tied; egg and sperm can't meet

Not no sperm produced

(Female sterilisation)

– oviducts/Fallopian tubes cut/tied;

– egg and sperm can't meet

Not no eggs produced

(Diaphragm/femidom)

– placed in vagina;

– egg and sperm can't meet;

(Cap)

– placed over cervix;

– egg and sperm can't meet;

(Coil)

– placed inside uterus; prevents implantation;

(Rhythm/abstinence)

– sperm and egg can't meet/no fertilisation;

no sperm in ejaculate

Response	Mark
Candidates must use appropriate specialist terms throughout to name at least two methods of contraception and describe how each prevents pregnancy. They use good spelling, punctuation and grammar and form and style are of a high standard.	[5]–[6]
Candidates use some appropriate specialist terms to name one or two methods of contraception and describe how each prevents pregnancy (account must include at least one description of how pregnancy is prevented). They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
Candidates name one or two methods of contraception or give one method and describe how it prevents pregnancy. They use limited spelling, punctuation and grammar and they have made little use of specialist terms.	[1]–[2]
Response not worthy of credit	[0]

[6]

20

B2 F13

5. (a) Any **two** from:
 fails to produce sex **hormones** (or named hormone)
 blocked oviducts
 mucus hostile to sperm
 STI or named STI
 unable to produce eggs
 radiotherapy or chemotherapy

H

[2]

(b) **Indicative Content**

- hormones** given/fertility hormones given;
 to increase ova production/egg production/super ovulation;
 eggs collected/gathered/harvested;
 from the ovaries;
 sperm added to ova/eggs;
 fertilisation/**nucleus** of sperm fuse with **nucleus** of ova/in Petri dish;
 kept until 8 cell stage/ensure normal development/divide by mitosis;
embryos inserted into the uterus;
 (Any **six** points)

I

also J&K

[6]

Band	Response	Mark
A	Candidates use appropriate terms throughout to give at least five points from the indicative content. They use good spelling, punctuation and grammar skills. Form and style are of a high standard.	[5]–[6]
B	Candidates use appropriate terms throughout to give at least three or four points from the indicative content. They use satisfactory spelling, punctuation and grammar. Form and style are of a satisfactory standard.	[3]–[4]
C	Candidates use appropriate terms throughout to give one or two points from the indicative content. They use limited spelling, punctuation and grammar and have made little use of specialist terms.	[1]–[2]
D	Response not worthy of credit.	[0]

6 (a) (i) Read graph at 82%; $100 - 82 = 18$

[2]

(ii) Up to 42;
Line at 80;
Line at 90;
(maximum [2] if no shading)

L

[3]

(iii) age 26–30;

M

[1]

(b) **Indicative content**

- Cholesterol laid down in walls
- Of **coronary** arteries
- Reducing blood flow
- Less glucose/oxygen available
- For respiration
- Heart muscle cells die
- So heart can't contract

[6]

Response	Mark
Candidates must use appropriate specialist terms throughout to describe how a heart attack occurs (using at least five of the above points). They use good spelling, punctuation and grammar and form and style are of a high standard.	[5]–[6]
Candidates use some appropriate specialist terms to describe how a heart attack occurs (using three or four of the above points). They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
Candidates describe how a heart attack occurs. However, the description is not presented in a logical sequence. They use limited spelling, punctuation and grammar and they have made little use of specialist terms.	[1]–[2]
Response not worthy of credit.	[0]

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7 (a) In the blood;

N

[1]

(b) **Indicative content**

- Day 1–5 lining breaks down/wall breaks down
- Day 1–5 hormone levels low
- Hormone level increases after day 5 or 6
- Hormone reaches a peak at day 11, 12, 13 or just before ovulation
- The hormone levels drop after ovulation
- On day 14 an egg is released from the ovary
- Oestrogen made in ovaries
- After day 14 egg moves down oviduct/Fallopian tubes
- Uterus lining built up after 5/6 to day 16

O

Response	Mark
Candidates use appropriate terms throughout and give at least five points from the indicative content (to include at least two links b/w hormone levels from the graph and two events in the menstrual cycle) to describe and account for the events of the menstrual cycle. They use good spelling, punctuation and grammar. Form and style are of a high standard.	[5]–[6]
Candidates use some appropriate terms throughout and give 3 or 4 points from the indicative content (to include at least one link b/w hormone levels and the menstrual cycle) to describe and account for the events of the menstrual cycle. They use satisfactory spelling, punctuation and grammar. Form and style are of a satisfactory standard.	[3]–[4]
Candidates give one or two points to partially describe/or account for the events of the menstrual cycle. They use limited spelling, punctuation or grammar skills.	[1]–[2]
Response not worthy of credit.	[0]

[6]

(c) (i) The man's sperm is added directly to the eggs; in the Petri dish;

[2]

(ii) To make sure that they are healthy/growing properly;

[1]

(iii) Any **two** from:

- How long should the embryos be stored?
- Who owns/has rights to the embryos/donor embryos?
- Spare embryos may be disposed of/destroyed
- Parents may wish to select, e.g. gender of the child
- Should spare embryos be used for research?
- Religious reasons

[2]

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12

P