1.4 Pregnancy, the Placenta and Fetal Development: 10-minute Pack

Total Marks

EDEXCEL 4BI1 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Describe what is meant by implantation of the embryo in the uterus wall during early pregnancy, naming the tissue involved.

(Total for Question 1 is 2 marks)

2 State two functions of the placenta during pregnancy, in the context of supporting the fetus.

(Total for Question 2 is 2 marks)

3 State two functions of the amniotic fluid surrounding the fetus during pregnancy.

(Total for Question 3 is 2 marks)

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4 State two ways that maternal smoking can affect the fetus during pregnancy.

(Total for Question 4 is 2 marks)

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5 Explain the role of the umbilical cord during pregnancy, naming the vessels it contains.

(Total for Question 5 is 2 marks)

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Mark scheme · 1.4 Pregnancy, the Placenta and Fetal Development: 10-minute Pack

Question 1

embryo embeds into the lining of the uterus, named as the endometrium **B1**

attachment forms a site where maternal tissues begin to supply nutrients and oxygen to the embryo **B1**

Answer: The embryo attaches and embeds into the endometrium (uterus lining), forming a site where maternal tissues begin to supply the embryo with nutrients and oxygen.

Question 2

exchanges nutrients and oxygen from the mother to the fetus **B1**

removes fetal waste products, including carbon dioxide, into the maternal blood for disposal **B1**

Answer: Exchanges nutrients and oxygen to the fetus; removes fetal wastes and carbon dioxide into the mother's blood.

Question 3

protects the fetus by cushioning against mechanical shocks **B1**

allows the fetus to move, enabling muscle and skeletal development and helping to maintain a constant temperature **B1**

Answer: Cushions and protects the fetus from shocks, and allows fetal movement for development while helping to maintain a stable temperature.

Question 4

reduced oxygen supply to the fetus due to carbon monoxide binding to maternal haemoglobin or nicotine causing vasoconstriction **B1**

increased risk of low birth weight or restricted fetal growth **B1**

Answer: Reduced oxygen supply to the fetus (carbon monoxide and nicotine effects) and increased risk of low birth weight or restricted growth.

Question 5

transports blood and dissolved substances between the fetus and the placenta **B1**

contains two umbilical arteries that carry deoxygenated fetal blood to the placenta and one umbilical vein that returns oxygenated blood to the fetus **B1**

Answer: The umbilical cord transports blood between fetus and placenta; it contains two umbilical arteries carrying fetal blood to the placenta and one umbilical vein returning oxygenated blood to the fetus.

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