Embryology: Single Best Answer questions

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The second meiotic division of the oocyte occurs:

- A at the stage of the primary follicle
- B at the stage of the graafian follicle
- C at ovulation
- D following penetration by the spermatozoa
- E when the zona pellucida disintegrates

Answer

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The enzyme released by the acrosome of the sperm to facilitate penetration of the zona pellucida is :

- A progesterone
- B acrosin
- C acromycin
- D hyaluronidase
- E pepsin

Answer

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The primitive streak in the developing embryo appears at;

- A first week
- B second week
- C third week
- D fourth week
- E fifth week

Answer

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- B second week
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Following fertilization, two pronuclei may be visualized in the ovum within:

- A 1 hour
- B 24 hours
- C 48 hours
- D 3 days
- E 4 days

Answer

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The stage of development at which the embryo implants in the endometrium is:

- A cleavage
- B morula
- C gastrulation
- D blastocyst
- E 16 cell stage

Answer

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The following statement best describes the process of gastrulation in the developing embryo:

- A formation of the trilaminar embryo
- B formation of the genital ridges
- C formation of the gonads
- D formation of the genito-urinary system
- E formation of the brain and spinal cord

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- **A formation of the trilaminar embryo**
- B formation of the genital ridges
- C formation of the gonads
- D formation of the genito-urinary system
- E formation of the brain and spinal cord

The adrenal medulla is derived from the:

- A neural ectoderm
- B mesoderm
- C endoderm
- D surface ectoderm
- E surface endoderm

Answer

The adrenal medulla is derived from the:

- **A neural ectoderm**
- B mesoderm
- C endoderm
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The trachea is derived from the:

- A ectoderm
- B mesoderm
- C endoderm
- D paraxial somites
- E neural crest

Answer

The trachea is derived from the:

- A ectoderm
- B mesoderm
- **C endoderm**
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- E neural crest

The following best describes fertilization :

- A it usually occurs in the ampulla of the fallopian tube
- B it is followed by implantation in the uterus within 48 hours
- C it usually occurs in the isthmus of the fallopian tube
- D it is possible only after the zona pellucida has disintegrated
- E it is followed by the first division of the ovum within 6 hours

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The primitive streak in the embryo:

- A identifies the caudal end of the embryo
- B the cranial end of the embryo
- C persists until the fifth week of development
- D becomes the adult brain
- E initiates the development of the cardio vascular system

Answer

The primitive streak in the embryo:

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Human chorionic gonadotrophin (HCG) can be first detected in the blood:

- A by 24 hours after fertilization
- B by 7 days after fertilization
- C by 14 days after fertilization
- D by 20 days after fertilization
- E by 36 days after fertilization

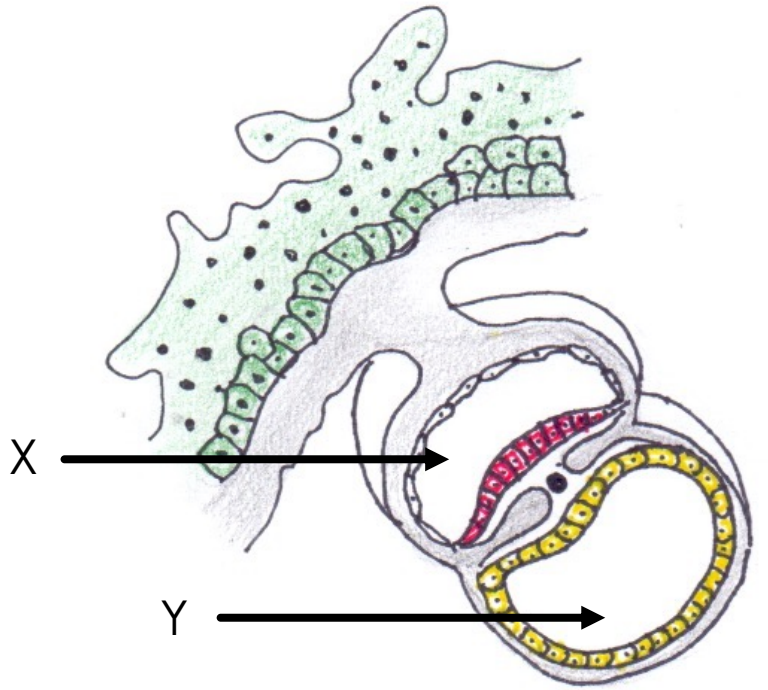
Answer

Human chorionic gonadotrophin (HCG) can be first detected in the blood:

- A by 24 hours after fertilization
- **B by 7 days after fertilization**
- C by 14 days after fertilization
- D by 20 days after fertilization
- E by 36 days after fertilization

Given is a diagrammatic representation of the blastocyst following implantation. Identify X and Y:

- A X is amniotic cavity and Y is yolk sac
- B X is yolk sac and Y is amniotic cavity
- C X is chorionic cavity and B is yolk sac
- D X is yolk sac and Y is chorionic cavity
- E X is amniotic cavity and Y is chorionic cavity



Answer

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- B X is yolk sac and Y is amniotic cavity
- C X is chorionic cavity and B is yolk sac
- D X is yolk sac and Y is chorionic cavity
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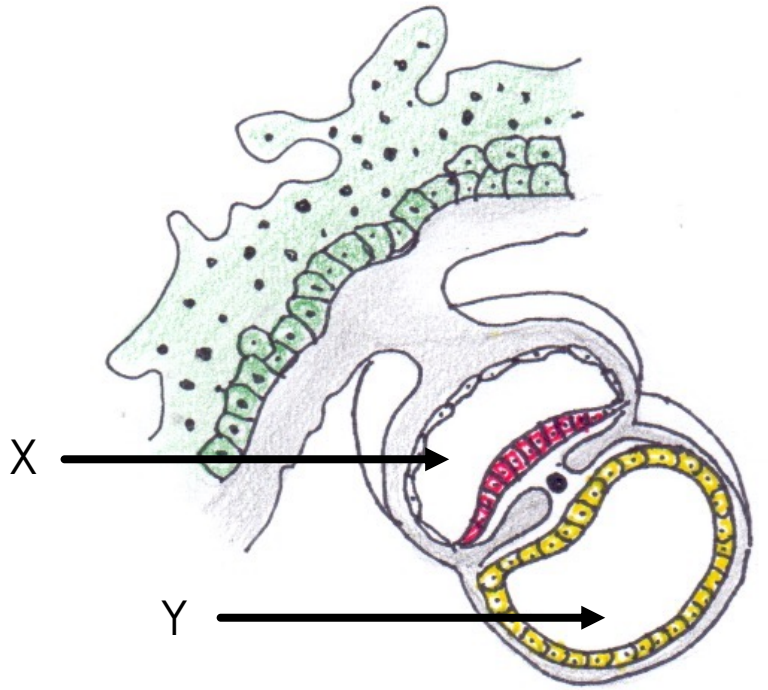

The mesoderm gives rise to:

- A sebaceous glands of the skin
- B blood
- C peritoneum
- D transitional epithelium of the bladder
- E pancreatic duct

Answer

The mesoderm gives rise to:

- A sebaceous glands of the skin
- **B blood**
- C peritoneum
- D transitional epithelium of the bladder
- E pancreatic duct

The epithelial lining of the trigone of the bladder is formed from:

- A ectoderm
- B endoderm
- C mesoderm
- D both ectoderm and mesoderm
- E both ectoderm and endoderm

Answer

The epithelial lining of the trigone of the bladder is formed from:

- A ectoderm
- B endoderm
- **C mesoderm**
- D both ectoderm and mesoderm
- E both ectoderm and endoderm

The upper two-thirds of the vagina is derived from the:

- A sino-vaginal bulb
- B paramesonephric ducts
- C mesonephric ducts
- D both the paramesonephric and mesonephric ducts
- E sino-vaginal bulb and paramesonephric ducts

Answer

The upper two-thirds of the vagina is derived from the:

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- **B paramesonephric ducts**
- C mesonephric ducts
- D both the paramesonephric and mesonephric ducts
- E sino-vaginal bulb and paramesonephric ducts

Under the influence of estrogen:

- A the paramesonephric ducts regress
- B the mesonephric ducts regress
- C the paramesonephric duct commence development
- D the gonadal ridge begins to form the ovaries
- E the external genitalia develop the female form

Answer

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In fetal circulation, blood passes from the inferior vena cava to the left ventricle via the:

- A patent ductus arteriosus
- B ventricular septal defect
- C foramen ovale
- D atrial septal defect
- E ductus venosus

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Complete vaginal atresia is commonly associated with:

- A congenital adrenal hyperplasia
- B Turners syndrome
- C absent or rudimentary uterus
- D testicular feminising syndrome
- E drug induced masculinisation of a female fetus

Answer

Complete vaginal atresia is commonly associated with:

- A congenital adrenal hyperplasia
- B Turners syndrome
- **C absent or rudimentary uterus**
- D testicular feminising syndrome
- E drug induced masculinisation of a female fetus

The primitive germ cells are derived from the:

- A ectoderm
- B endoderm
- C mesoderm
- D yolk sac
- E genital ridges

Answer

The primitive germ cells are derived from the:

- A ectoderm
- B endoderm
- C mesoderm
- **D yolk sac**
- E genital ridges

A hysterogram of a patient presenting with infertility reveals that she has uterus didelphys. This abnormality arise from:

- A a failure of fusion of the upper mesonephric ducts
- B a failure of fusion of the lower mesonephric ducts
- C a failure of fusion of the upper paramesonephric ducts
- D a failure of fusion of the lower paramesonephric ducts
- E a failure of fusion of the metanephric ducts

Answer

A hysterogram of a patient presenting with infertility reveals that she has uterus didelphys. This abnormality arise from:

- A a failure of fusion of the upper mesonephric ducts
- B a failure of fusion of the lower mesonephric ducts
- C a failure of fusion of the upper paramesonephric ducts
- **D a failure of fusion of the lower paramesonephric ducts**
- E a failure of fusion of the metanephric ducts

On ultrasound examination the crown-rump length of a single fetus is measured to be 30 mm. Its approximate gestational period corresponds to:

- A 5 weeks
- B 6 weeks
- C 10 weeks
- D 14 weeks
- E 16 weeks

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- D 14 weeks
- E 16 weeks

The embryological defect of the intestines that fails to disappear and to re-enter the abdomen at the umbilicus is:

- A Meckels diverticulum
- B gastrosciasis
- C omphalocoele
- D diaphragamatic hernia
- E urachus

Answer

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- **A Meckels diverticulum**
- B gastrosciasis
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From which of the following primitive layers does the allantois arise from:

- A ectoderm
- B mesoderm
- C endoderm
- D the extra-embryonic mesoderm
- E trophoblast

Answer

From which of the following primitive layers does the allantois arise from:

- A ectoderm
- B mesoderm
- **C endoderm**
- D the extra-embryonic mesoderm
- E trophoblast

Human chorionic gonadotrophin secretion by the trophoblast reaches it maximum values at:

- A 6 weeks
- B 8 weeks
- C 10 weeks
- D 14 weeks
- E 16 weeks

Answer

Human chorionic gonadotrophin secretion by the trophoblast reaches it maximum values at:

- A 6 weeks
- B 8 weeks
- **C 10 weeks**
- D 14 weeks
- E 16 weeks

In the developing female fetus, the labia minora is formed from the:

- A genital ridge
- B uro-genital bulb
- C urethral folds
- D paramesonephric duct
- E mesonephric duct

Answer

In the developing female fetus, the labia minora is formed from the:

- A genital ridge
- B uro-genital bulb
- **C urethral folds**
- D paramesonephric duct
- E mesonephric duct

In the developing female fetus, the genital ridge gives rise to the:

- A uterus
- B upper two thirds of vagina
- C ovary
- D fallopian tube
- E lower third of vagina

Answer

In the developing female fetus, the genital ridge gives rise to the:

- A uterus
- B upper two thirds of vagina
- **C ovary**
- D fallopian tube
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The following are derived form the embryonic ectoderm EXCEPT:

- A brain
- B epidermis of the skin
- C adrenal medulla
- D vertebral column
- E spinal cord

Answer

The following are derived from the embryonic ectoderm EXCEPT:

- A brain
- B epidermis of the skin
- C adrenal medulla
- **D vertebral column**
- E spinal cord

The following are derived from the embryonic endoderm EXCEPT:

- A trachea
- B liver
- C duodenal lining
- D adrenal medulla
- E thyroid gland

Answer

The following are derived from the embryonic endoderm EXCEPT:

- A trachea
- B liver
- C duodenal lining
- **D adrenal medulla**
- E thyroid gland

The kidney is formed from the:

- A paramesonephros
- B metanephros
- C pronephros
- D mesonephros
- E ureteric bud

Answer

The kidney is formed from the:

- A paramesonephros
- **B metanephros**
- C pronephros
- D mesonephros
- E ureteric bud

The paramesonephric ducts give rise to the:

- A prostatic utricle in the male
- B seminal vesicles
- C oviducts, uterus and upper two-third of vagina
- D upper vagina
- E the lower epoophoron

Answer

The paramesonephric ducts give rise to the:

- A prostatic utricle in the male
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The mesonephros forms all of the following structures EXCEPT:

- A the trigone of the bladder
- B Gartner's duct in the female
- C epididymis in the male
- D the round ligament in the female
- E the vas deferens in the male

Answer

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- A the trigone of the bladder
- B Gartner's duct in the female
- C epididymis in the male
- **D the round ligament in the female**
- E the vas deferens in the male

What is the embryonic origin of allantois:

- A ectoderm
- B endoderm
- C intermediate mesoderm
- D paraxial mesoderm
- E yolk sac

Answer

What is the embryonic origin of allantois:

- A ectoderm
- **B endoderm**
- C intermediate mesoderm
- D paraxial mesoderm
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The following are derived from the embryonic mesoderm EXCEPT:

- A humerus
- B quadriceps
- C liver
- D kidney
- E blood vessels

Answer

The following are derived form the embryonic mesoderm EXCEPT:

- A humerus
- B quadriceps
- **C liver**
- D kidney
- E blood vessels

The following are developed from the urogenital sinus EXCEPT:

- A the bladder wall
- B the ureters
- C the female urethra
- D the greater vestibular glands
- E the paraurethral glands

Answer

The following are developed form the urogenital sinus EXCEPT:

- A the bladder wall
- **B the ureters**
- C the female urethra
- D the greater vestibular glands
- E the paraurethral glands

The following are appropriately paired in terms of its embryonal origin and its structure in the adult.

- A umbilical artery : median umbilical ligament
- B ductus venosus : falciform ligament
- C umbilical vein : ligamentum teres
- D primitive yolk sac stalk : Meckel's diverticulum
- E allantois : prostatic urethra

Answer

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On vaginal examination a cystic swelling is seen arising for the left lateral wall of the vagina. It is fluctuant and easily compressed. Embryologically, it is a remnant of the:

- A mesonephric system
- B paramesonephric system
- C gubernaculum
- D pronephros
- E metanephros

Answer

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The ureter forms as at outgrowth of the:

- A mesonephric duct
- B paramesonephric duct
- C urogenital sinus
- D cloaca
- E pronephric duct

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- **A mesonephric duct**
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An ultrasound examination of the kidney of a newborn baby reveals that the baby has polycystic kidneys. This autosomal dominant disease is caused by:

- A failure of the ureteric bud to fuse with the metanephros
- B dysplastic kidneys
- C early splitting of the ureteric buds
- D failure of development of the mesonephros
- E failure of development of the metanephros

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In the adult female, the gubernaculum:

- A degenerates
- B persist as the round ligament
- C persists as the ovarian ligament
- D persists as the ovarian and round ligament
- E forms the Gartners duct

Answer

In the adult female, the gubernaculum:

- A degenerates
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- **D persists as the ovarian and round ligament**
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The trigone of the bladder is developed from:

- A the ectoderm
- B the mesoderm
- C the endoderm
- D paraxial mesoderm
- E urogenital sinus

Answer

The trigone of the bladder is developed from:

- A the ectoderm
- **B the mesoderm**
- C the endoderm
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In the fetal circulation, before reaching the inferior vena cava the umbilical venous blood passes through the :

- A ductus arteriosus
- B ductus venosus
- C patent ductus arteriosus
- D foramen ovale
- E hypogastric veins

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The following cardiac defects make up Fallot's tetralogy EXCEPT:

- A ventricular septal defect
- B pulmonary valve stenosis
- C overriding aorta
- D patent ductus arteriosus
- E right ventricular hypertrophy

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Thank you