BIOLOGY

BOOKS - NEW JYOTHI BIOLOGY (TAMIL ENGLISH)

HUMAN REPRODUCTION

Ncert Text Book Questions Fill In The Blanks

1. Humans reproduce _____ (asexually/sexually)

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2. Humans are ____ (oviparous, viviparous, ovoviviparous)

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3. Fertilisation is ____ in humans (external/internal)

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4. Male and female gametes are ____ (diploid/haploid)

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5. Zygote is ____ (diploid/haploid)

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6. The process of release of ovum from a mature follicle is called _____

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7. Ovulation is induced by a hormone called _____

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8. The fusion of male and female gametes is called ___

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9. Fertilisation takes place in ____

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10. Zygote divides to form ____ which is implanted in uterus.

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11. The structure which provides vascular connection between foetus and uterus is called _____

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12. Draw a labelled diagram of male reproductive system.

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13. Draw a labelled diagram of female reproductive system.

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14. Write two major functions each of testis and ovary.

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15. Describe the structure of a seminiferous tubule.

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16. What is spermatogenesis? Briefly describe the process of spermatogenesis.

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17. Name the hormones involved in regulation of spermatogenesis.

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18. Define spermiogenesis and spermiation.

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19. (a) Describe the structure of human spermatozoa with a labelled diagram.

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20. What are the major components of seminal plasma?

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21. What are the major functions of male accessory ducts and glands?

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22. What is oogenesis? Give a brief account of oogenesis.

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23. Draw a labelled diagram of a section through ovary

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24. Draw a labelled diagram of a Graafian follicle.

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25. Name the functions of the following.

a. Corpus luteum , b. Endometrium , c.Acrosome , d.Sperm tail , e.Fimbriae

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Ncert Text Book Questions True False

1. Androgens are produced by Sertoli cells. [True / False]

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2. Spermatozoa get nutrition from Sertoli cells.

(True/false)

3. Leydig cells are found in ovary.(True/False).

4. Leydig cells synthesize androgens. (True/False)

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5. Oogenesis takes place in corpus luteum. (True/False)

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6. Menstrual cycle ceases during pregnancy. (True/False)

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7. Presence or absence of hymen is not a reliable indicator of virginity or sexual experience.

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8. What is menstrual cycle? Which hormones regulate menstrual cycle?

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9. What is parturition? Which hormones are involved in induction of parturition?

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10. In our society the women are often blamed for giving birth to daughters. Can you explain why this is not correct?

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11. How many eggs are released by a human ovary in a month? How many eggs do you think would have been released if the mother gave birth to identical twins? Would your

answer change if the twins born were fraternal?

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12. How many eggs do you think were released by the ovary of a female dog which gave birth to 6 puppies?

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New Evaluation

1. Observe the picture shown below and answer the questions.

a.Identify A and B.

b. What is the future of these two parts with and without fertilization?

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2. Find out the correct path of sperm and fertilized egg from the alterna tives given below.

a. Vagina, uterus, cervix, oviduct

b. Vagina, cervix, oviduct, uterus

c. Cervix, oviduct, vagina, uterus

d. Uterus, cervix, vagina, oviduct

e. Uterus, oviduct, vagina, cervix

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3. Name the part analogous to penis seen in female reproductive system.

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4. It is interesting to note that in the female reproductive system there is no connection between the ovary and the remaining reproductive system.

a. How does an ovum enter the female reproductive system?

b. Name the parts seen in this portion.

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5. Follicular atresia is seen in human reproductive system.

a. Identify the system.

b. Write a short note on this peculiar phenomena.

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6. Write the importance of inguinal canal in human reproductive system.

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7. Arrange the given parts in two columns and give appropriate headings. tunica albuginea, antrum, rete testis, cumulus oophorus, corona radiata, epididymis, vasa efferentia, seminiferous tubules

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8. Name the parts formed in human embryo after

a. one month ,b. second month ,c. third month , d.fifth month

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9. How is pregnancy calculated?

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10. Give the life span of a. sperm , b. egg

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11. Diagrammatic representation of two ova are given below. Penetration of sperm is not possible in the diagram A. Write down the reason for this.

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12. While teaching "reproduction" in the class a student asked the teacher, “Why do human

beings not reproduce by binary fission?" As a student of zoology, what will be your answer?

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13. The given statements specify the major events in gametogenesis. Compare and categorise the statements into two columns and give headings to the columns.

i. Transformation of nucleus into head.

ii. Meiotic division forms unequal haploid cells.

iii. Total 3 polar bodies are formed.

iv. Primary spermatocytes undergo meiotic division.

v.Germinal epithelial cells produce spermatozoa.

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14. 

The diagram above shows the hormonal control of spermatogenesis. Like this construct a diagram on hormonal control of oogenesis.

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15. Explain the terms. Vasectomy , Hysterectromy and Tubectomy .

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16. The diagram below shows the formation of sperm. Like this draw a dia gram showing the formation of ovum with suitable labels.

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17. Normally polyspermy does not occur.

a. What happens if it occurs?

b. Which structure prevents polyspermy in ovum?

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18. Mention the difference between breech birth and normal birth.

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19. During embryonic development some parts of the embryo differentiate into a set of membranes called extra embryonic membrane.

a. Name the extra embryonic membrane.

b. Mention its importance in the embryonic development.

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20. Generally the delivery room is described as labour room. Why?

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21. In a breech birth, the baby is taken out by making an incision in the mother's abdomen. The method is called 'caesarean' not 'caesarean'. Why is it called so?

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22. The following figure shows the safety periods and fertile period of a nor mal lady.

a. What is fertile period?

b. What is safety period?

c. What is the significance of 14th day in this figure?

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23. In mammals, the testes are placed in the scrotal sacs. Give reason.

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24. Siamese twins are always either male or female and never be male and female.

a. Why are the twins called Siamese twins?

b. What do you mean by identical twins?

c. What are fraternal twins?

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25. Placenta makes the intimacy between mother and foetus.

a. What is placenta?

b. In what way it makes intimacy with foetus?

c. Name the portions of foetal and maternal parts of placenta.

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26. Copy the diagram. Identify and label any five parts.

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27. During ovulation only one ovum is produced. But doing one ejaculation about 200,000,000 sperms are released. Write the significance of increase in the number of sperms.

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28. Find out the correct sequence from below.

a. Fertilisation $\rightarrow$ zygote $\rightarrow$ blastula $\rightarrow$ morula $\rightarrow$ cleavage $\rightarrow$ gastrula

b. Cleavage $\rightarrow$ zygote $\rightarrow$ fertilisation $\rightarrow$ morula $\rightarrow$ blastula $\rightarrow$ gastrula

c. Fertilisation $\rightarrow$ cleavage $\rightarrow$ morula zygote $\rightarrow$ blastula $\rightarrow$ gastrula

d. Fertilisation $\rightarrow$ zygote $\rightarrow$ cleavage $\rightarrow$ morula $\rightarrow$ blastula $\rightarrow$ gastrula

e.Zygote $\rightarrow$ fertilisation $\rightarrow$ gastrula $\rightarrow$ cleavage $\rightarrow$ morula.

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29. The ovum is surrounded by four membranes. How can a sperm enter and fuse with the female pronuclei?

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30. Observe the diagrams and answer the questions that follow.

a. Give the names of these two processes A and B seen in human reproduction.

b. Name the three phases involved in these events.

c. If there are any differences in these processes A and B, give details.

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31. During cleavage of the mammalian zygote, the resultant blastomeres become smaller and smaller. Comment on this statement.

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32. A human ovum is released on the 14th day of menstrual cycle.

a. What happens to the ovum if it is fertilised by a sperm?

b. Where does the fertilisation occur?

c. What will happen to the Graafian follicles if the ovum is fertilised?

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33. A connection between foetal membrane and uterine wall is known as placenta.

a. Mention the functions of placenta.

b. What is the fate of placenta after parturition?

c. Sometimes the expulsion of placenta is followed by bleeding. Give reason.

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34. The germ layers are given. Complete the organs derived from the germ layers. Copy and complete the table.

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35. A woman has conceived and implantation occurred within her uterus. Discuss the sequence of changes upto the parturition which will take place within her body under the influence of various hormones.

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36. A fertilised egg is a blue print for future development. Justify the statement.

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37. Amnion is an effective shock absorber. Comment on it.

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38. First trimester of pregnancy is critical. Give reason.

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39. Find the odd one out in each group and justify.

a.Vasa efferentia, epididymis, prostate gland, seminal tube.

b.Ovary, penis, vagina, uterus, oviduct

c. Proliferative phase, menstrual phase, multiplication phase, ovulatory phase, secretory phase.

d.Budding, gametogenesis, fertilization, cleavage, gastrulation

e. Acrosome, zona pellucida, distal centriole,

middlc piece, axial centriole

f. Amnion, foetus, chorion, allantois, yolk sac

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40. Observe the diagram.

a. Where is this event taking place?

b. Write a note in the sequence from first day to twenty eight day, mentioning the four phases.

c. Give the names of the hormones involved in this event.

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41. Change in nucleus, acrosome formation, changes in mitochondria, centrioles, cytoplasm. These events take place in a reproductive system.

a. In which reproductive system do these events take place?

b. Why do these changes take place ?

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42. The relaxin secreted by placenta relaxes the pubic ligaments during parturition.

i. Mention the other hormones secreted by placenta.

ii. Suppose relaxin is not secreted, mention the other method for the delivery of the child.

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43. Observe the flowchart showing the hormonal control of Menstrual cycle

a.Observe and name the hormones A,B ,C and D

b. Copy the flow chart and represent the feed back mechanism in that.

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44. The diagram of human blastocyst is given below .

a.Identify A and B

b.Mention the fate of 'B'.

c.Copy and fill the given flow chart showing the fate of A.

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45. A concept map showing the filtration between glomerulus and Bowman's capsule is given below.

Draw a concept map to show the filtration between uterine wall and placenta.

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Questions From Edumate

1. Analyse the schematic representation given below.

Though sperms are ejaculated on the cervical face they may not enter into the uterus.

i. Why the sperm cannot enter into the uterus?

ii. What are the other means by which the embryo is protected?

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2. An embryologist interested in studying the morphogenetic movements in chick embryo, during 3 cells layer stage of the embryo, added some vital stains as embryonic fate markers (embryonic fate markers usually stain the cells and in future development of embryo the stained cells differen tiate into developing organ. Thus the movement of the cell can be traced). He gave the upper layer green colour, middle layer orange and innermost layer blue.

a. Name the 3 layers mentioned above.

b. Based on your knowledge regarding the

development of an embryo predict three organs with these respective colours.

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3. After studying the female reproductive organs a student says that clitoris is a useless organ. How will you respond to this statement? Evaluate the statement and justify your answer.

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4. The following graph shows the levels of the hormones estrogen and progesterone one in the blood of a lady during the first month of pregnancy.

Answer the questions given below.

a. Name the process occurred between day 0 and day 5.

b. When does the levels of estrogen and progesterone become equal?

c. List the evidences from the graph that show how an ovum is fertilised.

d. What would be the probable level of progesterone between day 16 and day 30 if pregnancy is absent?

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5. Based on the given diagram prepare a flow chart explaining the process of spermatogenesis.

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6. Read the following paragraph given.

Although spermatozoa are said to be 'mature' when they leave the epidi dymis, their activity is checked by multiple inhibitory factors secreted by the genital duct epithelium. Therefore when they are first expelled in the semen, they are unable to perform their duties in fertilizing ovum. Be fore fertilization they have to be activated.

a. How and from where the sperm gets activated?

b. Give an outline of the remaining process after activation.

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7. A dead foetus of a four month old boy child is surgically removed from the mother's uterus. But in the foetus testes were not present in the scrotum. Give reason.

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8. The following diagrams show sequence of events in the development of a mature ovarian follicle and corpus luteum.

a.Which are the main hormones produced by the ovary at the stage C and E ?

b. A lady used a contraceptive pill containing only estrogen for a prolonged period. State the after effect.

c. Which among the stages A to E would you expect is maintained by the ovary during pregnancy? Give reason for your answer.

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Previous Year Hse Questions

1. Although the embryo depends on the mother's blood for its nutrition and supply of oxygen, its circulatory system is never directly connected with the maternal blood vessels.

a. What will be the effect on the embryo if its circulatory system is directly connected with the maternal blood vessels?

b. State two functions of the placenta.

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2. In certain cases an egg develops into an embryo without fertilisation. For example in bees and wasps, eggs which remain unfertilised develop into males, while females develop from fertilised eggs.

a. State the name of the process given above.

b. Give two other examples of animals exhibiting the above phenomenon.

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3. FSH and LH are the hormones released by both female and male.

a. Which organs produce these hormones?

b. Mention the effects of these hormones in male and female.

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4. "Rh antigen has great significance in connection with pregnancy."

a. Name the haemolytic disease of foetus related to Rh antigen.

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5. During oogenesis in human female, a primary oocyte produces four haploid cells. Out of these four haploid cells, only one is used in reproduction. Then,

a. what is the fate of the haploid cell used in reproduction?

b. What happens to the other three haploid

cells?

c. What is the significance of this type of meiotic division during oogenesis?

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6. Some events related to human reproduction are given below.

Formation of placenta, First meiotic division, Cortical reaction, Ovulation, Fertilizin - antifertilizin reaction, Gastrulation.

a. Arrange the events in sequential order.

b. State why you arrange so.

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7. Fill the blank boxes logically.

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8. Given below is the diagrammatic representation of human blastocyst. Observe

the diagram and answer the following questions.

a.Identify A and B.

b.Write the functions of A and B.

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9. The graph below shows the levels of LH and FSH at various stages of menstrual cycle.

a. Name the source of LH and FSH.

b.The level of LH is a maximum during the middle day of the cycle. Mention its effect.

c.Note the function of LH in males.

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Previous Year Competitive Exam

1. In males testes are contained in the scrotal sacs because

A. other organs do not make space for the testes in the abdominal cavity

B. testes in the abdomen will hamper maturation of sperms

C. it provides temperature that is slightly lower than body temperature required for formation of sperm

D. it facilitates ejaculation

Answer: C

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2. The main function of trophectoderm in mammalian embryo is

A. protection of the developing cells

B. drawing food for the developing cells

C. formation of future ectoderm

D. formation of placenta

Answer: D

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3. The nutritive cells found in seminiferous tubules are

A. Leydig cells

B. Sertoli cells

C. spermatogonial cells

D. atretic follicular cells

Answer: B

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4. Bartholin's glands are situated

A. at the reduced tail end of birds

B. on either side of vagina in humans

C. on either side of vas deferens in humans

D. on the sides of the hcad of some amphibians

Answer: B

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5. Fertilizin is a chemical substance produced from

A. mature eggs

B. acrosome

C. polar bodies

D. middle piece of sperm

Answer: A

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6. In human beings, the eggs are

A. microlecithal

B.

C. mesolecithal

D. alecithal

Answer: A

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7. The morphogenetic movements change the hollow spherical blastula into a

A. embryonic disc

B. gastrula

C. morula

D. neurula

Answer: B

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8. During the ovulatory phase, the structure called corpus luteum is formed from

A. endometrium

B. isogametes

C. epididymis

D. ruptured Graafian follicle

Answer: D

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9. The cells which secrete male sex hormone testosterone are

A. isthmus

B. crypt cells

C. Lieberkiihn

D. Leydig's cells

Answer: D

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10. Fertilisation of ova in humans takes place in

A. ovary

B. vagina

C. uterus

D. fallopian tube

Answer: D

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11. The nutritive cells found in seminiferous tubules are

A. leydig cell

B. sertoli cells

C. spermatogonial cells

D. atretic follicular cells

Answer: B

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12. In males testes are contained in the scrotal sacs because

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C. it provides temperature that is slightly lower than body temperature required for formation of sperm

D. it facilitates ejaculation

Answer: C

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13. Find out the wrong statement.

A. Amnion is the outer layer containing amniotic fluid that acts as shock absorber to the soft embryo

B. Yolk-sac is a foetal membrane that helps in the nourishment of the embryo in

general

C. In mammals allantois is not excretory in function

D. Chorio- allantoic membrane develops villi and contributes much to the development of placenta

Answer: A

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14. Spermatids are transformed into spermatozoa by

A. spermiation

B. spermatogenesis

C. meiosis

D. spermiogenesis

Answer: D

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15. Accessory glands associated with the genital organs in female rats are

i.Vestibular Bartholins , ii.Cowper's gland , iii.Ampullary glands , iv.Vesicular gland

A. i and ii

B. iii and ii

C. iv only

D. I only

Answer: D

16. The chemical substance released by activated spermatozoa that acts on the ground substances of the follicle cells is known as

A. progesterone

B. hyaluronidase

C. relaxin

D. gonadotropin

Answer: B

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17. In human, the unpaired male reproductive structure is

A. seminal vesicle

B. prostate

C. bulbourethral gland

D. testes

Answer: B

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18. The process of delivery of the foetus is called

A. Parturition

B. Implantation

C. Fertilisation

D. Lactation

Answer: A

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