Sample Question Paper (Chapter-3)

Class-12 Biology | Term-I

General Instructions:

1. The Question Paper contains three sections and a total of 60 questions.
2. Section A has 24 questions. Attempt ***any 20*** questions.
3. Section B has 24 questions. Attempt ***any 20*** all questions.
4. Section C has 12 questions. Attempt ***any 10*** questions.
5. All questions carry equal weightage of ***0.7*** marks.
6. There is no negative marking.

Section – A

Section – A consists of 24 questions. Attempt any 20 questions from this section.

The first attempted 20 questions would be evaluated.

1. The correct chronological order of the following events is
(a) Gametogenesis → Fertilization → Insemination → Gestation → Implantation →Parturition
(b) Gametogenesis → Insemination → Fertilization → Impanation → Parturition → Gestation
(c) Gametogenesis → Insemination → Fertilization → Implantation → Gestation →Parturition
(d) None of these

2. The testes are situated ____ the abdominal cavity within a pouch called ____.
(a) inside, testicular lobules
(b) outside, scrotum
(c) outside, vas deferens
(d) inside, scrotum

3. The scrotum helps in maintaining a temperature ____ lower than the internal body temperature.
(a) 1 to 1.5°C
(b) 2 to 2.5°C
(c) 3 to 3.5°C
(d) 4 to 4.5°C

4. Seminiferous tubules contain ____ cells for providing nutrition to sperm cells.
(a) Leydig cells
(b) Interstitial cell
(c) Sertoli cells
(d) Germ cells

5. The enlarged end of penis is known as
(a) Glans
(b) Foreskin
(c) Urethra
(d) Prostate

6. If A stands for seminal vesicles, B stands for bulbourethral glands, C stands for prostate gland, then which of the following is true?
(a) A and C occurs in pair
(b) A and B occur in pair
(c) B and C occur in pair
(d) None of these

7. Seminal plasma is rich in which sugar?
(a) Sucrose
(b) Glucose
(c) Fructose
(d) Maltose

8. The ovarian stroma is divided into zones
(a) Peripheral medulla and inner cortex
(b) Peripheral epithelia and inner endothelia
(c) Peripheral cortex and inner medulla
(d) Peripheral endothelia and inner epithelia

9. Birth canal is formed by
(a) Cervical canal + Uterus
(b) Cervical canal + Vagina
(c) Cervical canal + Isthmus
(d) Cervical canal + Fallopian tube

10. The layer of uterine tissues responsible for strong contractions during childbirth is
(a) Perimetrium
(b) Mesometrium
(c) Mesoderm
(d) Myocardium

11. Several mammary ducts join to form
(a) Mammary lobe
(b) Alveoli
(c) Mammary ampulla
(d) Lactiferous duct

12. Secondary spermatocytes give rise to
(a) Diploid spermatids
(b) Haploid sperm
(c) Diploid sperm
(d) Haploid spermatid

13. Spermiogenesis is
(a) Transformation of sperm into spermatids.
(b) Transformation of spermatogonia into primary spermatocyte.
(c) Transformation of secondary spermatocyte into spermatids.
(d) Transformation of spermatid into spermatozoa.

14. After spermiogenesis, the sperm head is embedded in the ____ cells.
(a) Sertoli
(b) Leydig
(c) Interstitial
(d) Both (a) and (b)

15. The release of sperms from seminiferous tubules is known as ____.
(a) Ejaculation
(b) Copulation
(c) Spermiation
(d) None of these

16. Luteinizing hormone (LH) acts on ____ cells and stimulates synthesis and secretion of ____.
(a) Leydig cells, FSH
(b) Interstitial cells, androgens
(c) Leydig cells, GnRH
(d) None of these

17. For a normal male fertility, which of the following statements is correct?
(a) 60 percent sperm must have normal motility and 40 per cent must have normal shape.
(b) 60 percent sperm must have normal shape and 40 per cent must have acrosome.
(c) 60 percent sperm must have normal shape and 40 per cent must have vigorous motility.
(d) None of these

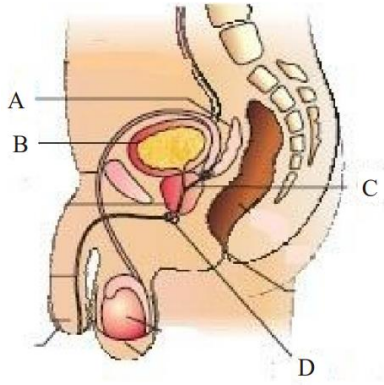
18. Semen consists of
(a) Seminal plasma + Spermatid
(b) Seminal plasma + Spermatozoa
(c) Seminal plasma + Spermatogonia
(d) None of these

19. The primary and secondary follicle are surrounded by cells known as
(a) Granulosa
(b) Mucosa
(c) Serosa
(d) Granuloma

20. The mature tertiary follicle is also known as
(a) Ovum
(b) Oogonia
(c) Graafian follicle
(d) Polar body

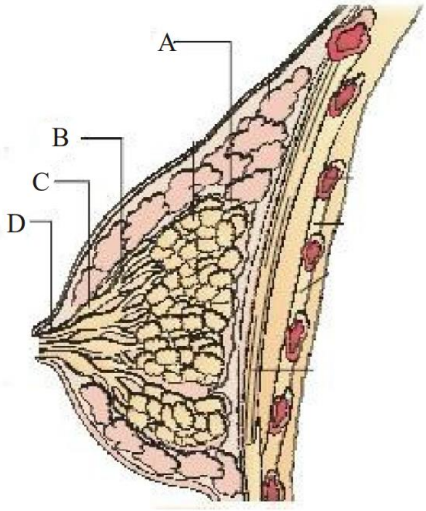
21. After ovulation, Graafian follicle transforms into
(a) Corpus cavernosa
(b) Corpus pellucida
(c) Corpus luteum
(d) Corpus metrium

22. In the given figure identify the structure which when removed will be resulting in the sperm reacting with acidic urine in the urethra.



(a) A (b) B
(c) C (d) D

23. Refer the figure of mammary gland with few structures marked as A, B, C and D. Which structure contains clusters of milk secreting cells?



(a) A (b) B
(c) C (d) D

24. The given figure represents a stage of embryonic development. Identify the stage with its feature.

(a) Blastocysts, ready to fertilize with sperm.
(b) Secondary oocyte, implants on endometrial layer of uterus.
(c) Morula, formed by mitotic division of zygote.
(d) Ovary, produce female gamete and secretes hormones like estrogen etc

Section – B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section.

The first attempted 20 questions would be evaluated.

Question No. 25 to 28 consist of two statements – *Assertion* (A) and *Reason* (R). Answer these questions selecting the appropriate option given below:

a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is False but R is true.

25. ***Assertion :*** Testis is situated outside the abdominal cavity with in a pouch called scrotum..
Reason: Scrotum helps in maintaining the low temperature of the testes necessary for spermatogenesis.

26. ***Assertion :*** Myometrium undergoes cyclical changes during menstrual cycle.
Reason : Myometrium's lines the uterine cavity

27. ***Assertion :*** In humans the menopause occurs at approximately 50 years of age.
Reason : Cyclic menstruation is an indicator of abnormal reproductive phase.

28. ***Assertion :*** The presence or absence of hymen is not a reliable indicator of virginity or sexual experience.
Reason : Hymen often torn during first intercourse but it can also be broken by sudden fall, insertion of vaginal tampon, active participation in some sports like horse riding, cycling..

29. Which of the following pair is incorrectly matched?
(a) Leydig cells – Testosterone
(b) Spermatogenesis – Seminiferous tubules
(c) Male reproductive system – Pelvis region
(d) Primary spermatocyte – Mitotic division

30. At the time of fertilization, chromosome number
(a) is halved
(b) remains haploid
(c) becomes diploid
(d) does not change

31. Once the sperm is injected into the female genital tract, which junction is primarily concerned with meeting of sperm with ovum?
(a) Utero-ampullary junction
(b) Ampullary-isthmic junction
(c) Isthmic-infundibullary junction
(d) Uterine-cervical junction

28. All copulations do not lead to pregnancy. The most appropriate Reason to support this statement is
(a) The ovum and sperm should be transported randomly to ampullary-isthmic junction.
(b) The ovum and sperm should be continuously transported to ampullary-isthmic junction.
(c) The ovum and sperm should be simultaneously transported to ampullary- isthmic junction.
(d) None of these

29. The sperm comes into contact with the ____ layer of ovum to cause fertilization.
(a) Corona radiate
(b) Perivitelline layer
(c) Zona pellucid
(d) Zona fasciculata

30. Once a sperm fuses with an ovum, the remaining sperms cannot fertilize ovum. What changes are responsible for such phenomenon?
(a) Selective permeation through ovum.
(b) Specific spatial arrangement of corona radiata cells.
(c) Change in the membrane zona pellucida.
(d) Ovum releases toxic substances thereby killing other sperms.

31. Female produces only
(a) One type of gamete Y
(b) One type of gamete X
(c) Either X or Y type of gamete
(d) All of these

32. After implantation the finger-like projection which appears on the trophoblast are known as
(a) Intestinal villi
(b) Ampullary villi
(c) Chorionic villi
(d) Amniotic villi

33. After implantation the finger-like projections on the trophoblast are surrounded by
(a) Uterine tissue
(b) Maternal blood
(c) Both (a) and (b)
(d) Either (a) and (b)

34. The structural and functional unit between the foetus and maternal blood is known as
(a) Inner cell
(b) Placenta
(c) Trophoblast
(d) Chorionic villi

35. Placenta also acts as a/an ____ tissue.
(a) Endocrine (b) Exocrine
(c) Paracrine (d) Mepacrine

36. The scientific name of childbirth is
(a) Gestation

(b) Parturition
(c) Implantation
(d) Foetal development

37. During parturition, the mild uterine contractions which lead to expulsion of the foetus is known as
(a) Foetal ejection release
(b) Foetal ejection reflex
(c) Foetal uterine reflex
(d) Foetal placental reflex

38. Which hormone is responsible for severe uterine contractions during parturition?
(a) Oestrogen
(b) Oxytocin
(c) Progesterone
(d) Relaxin

39. The milk produced during the initial days of lactation is called
(a) Menstrum
(b) Colostrum
(c) Gynostrum
(d) None of these

40. The embryo with 8 to 16 blastomeres is called
(a) Blastula
(b) Gastrula
(c) Morula
(d) None of these

41. Lack of menstruation may be indicative of
(a) Pregnancy
(b) Routine work stress
(c) Poor health
(d) All of these

42. . The human male has which of the following sex chromosome pattern?
(a) XYX (b) XY
(c) XX (d) YY

43. Each spermatogonium is ____ and has ____ number of chromosomes.
(a) n, 45 (b) 2n, 23
(c) 2n, 46 (d) n, 46

44. The average time span of human gestation is
(a) 8 months (b) 9 months
(c) 10 months (d) 1 year

45. Which of the following duct stores sperm?
(a) Vasa efferentia (b) Rete testis
(c) Epididymis (d) All of these

46. Menstrual flow occurs due to the lack of
(a) Progesterone
(b) FSH
(c) Oxytocin
(d) Vasopressin

47. Which facts about the uterus (in human females) is true?
(a) Single
(b) Also called womb
(c) Inverted pear shape
(d) All of these

48. Which of the following hormones is not secreted by human placenta?
(a) hCG
(b) Oestrogens
(c) Progesterone
(d) LH

Section – C

Section-C consists of one case followed by 6 questions linked to this case (Q.No.49 to 54). Besides this, 6 more questions are given. Attempt any 10 questions in this section.
The first attempted 10 questions would be evaluated.

Case.

The first menstruation is called menarche, that usually occurs between 12 and 15 years. In human females, menstruation is repeated at an average interval of about 28129 days and is called menstrual cycle. It is regulated by certain hormones, as pituitary gland is stimulated by releasing factors produced in the hypothalamus. The hormones produced by pituitary gland influence the ovaries. The hormones secreted by the ovaries affect the walls of the uterus.

49. The breakdown of endometrium is characteristic of
(a) Proliferative phase
(b) luteal phase
(c) ovulatory phase
(d) menstrual phase

50. Which days of the menstrual cycle marks the proliferative phase?
(a) 1 - 5
(b) 15 - 28
(c) 6 - 13
(d) 10 - 14

51. Which of the following occurs during secretory phase?
(a) Empty Graafian follicle changes into corpus luteum
(b) Primary follicle changes into Graafian follicle.
(c) Endometrium rebuilds and estrogen secretion increases
(d) LH surge inducing release of an ovum.

52. Identify the hormones that attain peak level during ovulatory phase?
(a) FSH
(b) Progesterone
(c) LH
(d) Both (a) and (c)

53. Withdrawal of which hormone causes degeneration of corpus luteum?
(a) FSH
(b) LH
(c) Progesterone
(d) Estrogen

54. When does menopause occur?
a) 12-15 years

b) 18-21 years
c) 50-53 years
d) None of these

55. Implantation leads to
(a) Formation of trophoblast in blastocyst
(b) Formation of inner cell mass in blastocyst
(c) Pregnancy
(d) All the above

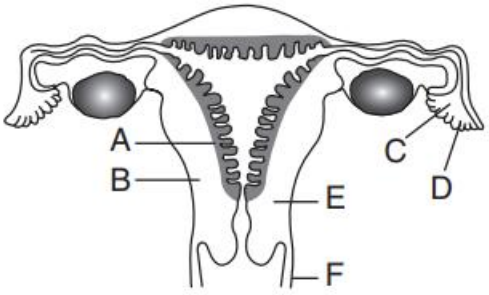
56. Which of these hormones is/are produced in women during pregnancy?
(a) HCG
(b) HPL
(c) Relaxin
(d) All of these

57. Which of these statements is incorrect about embryo development?
(a) After one month of pregnancy the heart is formed.
(b) By the end of first trimester most of the major organ systems are formed.
(c) First movement of foetus is observed in the seventh month.
(d) At the end of second trimester, the body is covered with fine hair, eyelids separate and eye lashes are formed.

58. Stem cells which have the potential to produce all types of cells, tissues and organs are present in
(a) Ectoderm
(b) Inner cell mass
(c) Trophoblast
(d) Endoderm

59. Hymen can be torn or broken by
(i) First coitus
(ii) Sudden fall or jolt
(iii) Horse riding
(iv) Cycling
(v) Insertion of a vaginal tampon
(a) i, ii and iv only
(b) iii, iv and v only
(c) i, iv and v only
(d) All of these

60. The figure given below depicts a diagrammatic sectional view of the female reproductive system of humans. Which one set of three parts out of A to F have been correctly identified?



(a) C - Infundibulum, D - Fimbriae, E – Cervix
(b) D - Oviductal funnel, E - Uterus, F – Cervix
(c) A - Perimetrium, B - Myometrium, C - Fallopian tube
(d) B - Endometrium, C - Infundibulum, D - Fimbriae

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