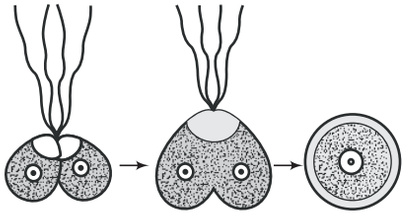
DAY TWENTY EIGHT

Unit Test 6
(Reproduction)

1 Vegetative reproduction involves the formation of new plants by
(a) zygote
(b) spore
(c) vegetative organs of the parent plant
(d) None of the above

2 Events in the diagram are (in sequential order)



(a) fission of gametes → new individual → zygote
(b) fusion of gametes → zygote → new individual (cell 2*n*)
(c) fission of gametes → zygote → new individual (cell 2*n*)
(d) stages in the gametogenesis

3 Genetic recombination occurs in
(a) asexual reproduction
(b) vegetative propagation
(c) sexual reproduction
(d) All of the above

4 Xenia refers to the effect of pollen on
(a) stem (b) taste of fruit
(c) vascular tissue (d) endosperm

5 Fusion of mature individuals, which directly act as gametes is called
(a) hologamy (b) autogamy
(c) heterogamy (d) conjugation

6 Which one of the following statement is correct?
(a) hard outer layer of pollen is called intine
(b) sporogenous tissue is haploid
(c) endothecium produces the microspores
(d) tapetum nourishes the developing pollen

7 Which of the following statements is true with reference to cross-pollination in angiosperms?
(a) It requires the production of a large number of pollen grains
(b) It can fail to occur due to distance barrier
(c) It occurs only in unisexual flowers
(d) It most often results in high yield of plants

8 Non-transfer of pollen from anther to stigma of the same flower due to mechanical barrier is
(a) dichogamy
(b) herkogamy
(c) heterostyly
(d) cleistogamy

9 Match the following columns.

	Column I		Column II
A.	Clone	1.	Agamospermy
B.	Plant apomixis	2.	Scion
C.	Grafting	3.	Callus
D.	Tissue culture	4.	Flower
E.	Inflorescence	5.	Ramet

Codes

	A	B	C	D	E
(a)	5	1	2	3	4
(b)	5	1	3	2	4
(c)	1	2	3	4	5
(d)	5	2	3	4	1

10 Nuclear endosperm has
(a) every nuclear division followed by wall formation
(b) initially free nuclear divisions followed by wall formation
(c) first division followed by wall formation and other free nuclear
(d) None of the above

11 Heterozygosity is produced following
(a) xenogamy
(b) geitonogamy
(c) autogamy
(d) cleistogamy

12 Which of the following statements are true?
I. A sperm head contains DNA and an acrosome.
II. An acrosome contains enzymes that enable sperm to produce the ATP needed to propel themselves out of the male reproductive tract.
III. Mitochondrion is present in the middle-piece of a sperm and produces ATP for sperm motility.
IV. A flagellum propels a sperm along its way.
(a) I, II, III and IV (b) II, III and IV
(c) I, III and IV (d) II and IV

13 Which one of the following characteristics is found in males?
(a) Males have darker colouration than females
(b) Males have smaller gametes compared to females
(c) Males are smaller than females
(d) Males defend territories

14 Which of the following statements are true?
I. In spermatogonia, some of the daughter cells remain to serve as a reservoir of cells for future mitosis.
II. Meiosis-I results in daughter cells with only one member of each chromosome pair.
III. Meiosis-II separates the chromatids of each chromosome.
IV. In spermiogenesis, maturation of spermatids into sperm takes place.
(a) I, II and III
(b) I, II, III and IV
(c) I, III and IV
(d) I, II and IV

15 Human chorionic gonadotropin
(a) begins to be produced 6 months after fertilisation
(b) is produced by the seminal vesicle
(c) is produced in the corpus luteum
(d) is present only if a successful fertilisation has taken place

16 7-celled and 8-nucleated structure in angiosperms, is known as
(a) embryo sac (b) endosperm
(c) embroye (d) egg apparatus

17 Egg apparatus of angiosperms consists of
(a) one synergid and two egg cells
(b) two synergids and one egg cell
(c) one central cell, two synergids and three antipodal cells
(d) one egg cell, two polar nuclei and three antipodal cells

18 Match the following columns.

	Column I		Column II
A.	Binary fission	1.	Algae
B.	Zoospore	2.	*Amoeba*
C.	Conidium	3.	*Hydra*
D.	Budding	4.	*Penicillium*
E.	Gemmules	5.	Sponge

Codes

	A	B	C	D	E
(a)	1	4	5	3	2
(b)	2	1	4	3	5
(c)	1	2	3	4	5
(d)	1	4	3	2	5

19 Formation of sporophyte from a vegetative portion of prothallus (or from gametophyte) without sexual fusion is called
(a) apogamy (b) apomixis
(c) apocarpy (d) apospory

20 Function of filiform apparatus is to
(a) recognise the suitable pollen at stigma
(b) stimulate division of generative cell
(c) produce nectar
(d) guide the entry of pollen tube

21 Which of the following is not a part of mammalian male reproductive system?
(a) Vas deferens (b) Cowper's gland
(c) Bartholin's gland (d) Preputial gland

22 Binary fission is a method of reproduction in
(a) protozoans (b) bacteria
(c) blue-green algae (d) All of these

23 Sporozoans reproduce by
(a) fission
(b) budding
(c) multiple fission
(d) fragmentation

24 Identify the animal, which shows budding as the mode of reproduction.
(a) *Hydra* (b) *Sycon*
(c) *Leucosolenia* (d) All of these

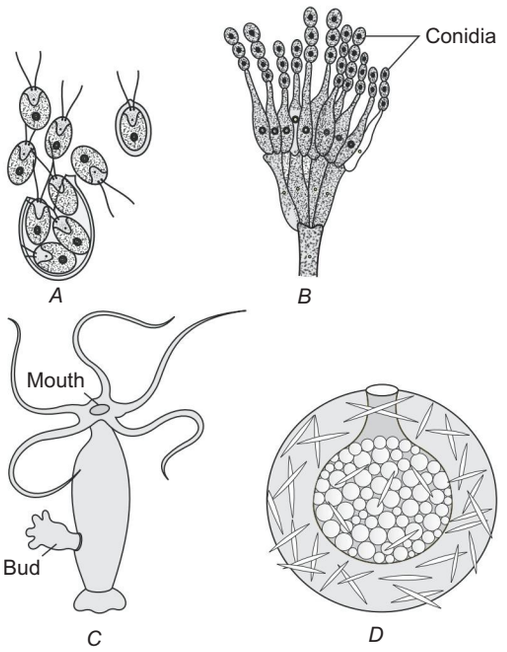
25 Sexual reproduction does not occur in
(a) viruses (b) *Hydra*
(c) *Obelia* (d) *Aurelia*

26 Oral contraceptives check ovulation by inhibiting the secretion of
(a) follice stimulating hormone
(b) luteinising hormone
(c) Both (a) and (b)
(d) progesterone

27 Heterogamy is observed in

(a) protozoans (b) blue-green algae
(c) bacteria (d) mammals

28 Identify the following diagram.



A. Zoospore in *Chlamydomonas*
B. Conidia of *Penicillium*
C. Buds in *Hydra*
D. Gemmules in sponge

All the above are

(a) bodies involved in sexual reproduction
(b) bodies involved in asexual reproduction
(c) bodies of young ones
(d) All the above are correct

29 Which of the following are functions of Sertoli cells?

I. Protection of developing spermatogonia cells.
II. Nourishment of sperm and spermatids.
III. Phagocytosis of excess sperm cytoplasm as development proceeds.
IV. Mediating the effects of testosterone and follicle stimulating hormone.

Choose the correct option.

(a) I, II and IV
(b) I, II and III
(c) II, III and IV
(d) I, II, III and IV

30 During ovulation, which of the following does not occur?

(a) Graafian follicle ruptures
(b) Oestrogen production reaches its lowest level
(c) FSH and LH plasma levels increase
(d) Formation of corpus luteum takes place

31 Which of the following statements are true?

I. Cells present in the endoderm of the yolk sac give rise to oogonia.
II. Ova arise from the germinal epithelium of the uterus.
III. Primary oocytes enter prophase of meiosis-I during foetal development but it is completed only after reaching puberty.
IV. When formation of a secondary oocyte is complete, it proceeds to metaphase of meiosis-II and stops at this stage.

Choose the correct option.

(a) I, III and IV (b) I and III
(c) I, II and IV (d) I and II

32 In first phase of the menstrual cycle,

(a) oogonia transform into primary oocytes
(b) the thickness of the stratum basalis decreases
(c) the Graafian follicle ruptures
(d) the dominant follicle is opsonised

33 The main reasons of infertility in females are

(a) irregular menstrual cycle
(b) blockage of Fallopian tube
(c) vaginal and cervical infection
(d) All of the above

34 What is correct about a test tube baby?

(a) Fertilisation in female's genital tract and growth in test tube
(b) Reasing of premature born baby in an incubator
(c) Fertilisation outside and gestation inside mother's womb
(d) Both fertilisation and development are done outside the female genital tract

35 Menstrual discharge consists of

(a) sloughed endometrial tissues
(b) mucous and leucocytes
(c) unfertilised ovum
(d) All of the above

36 Match the vegetative propagules listed under Column I with the plants given under Column II; choose the appropriate option from the given choices.

	Column I		Column II
A.	Rhizome	1.	*Agave*
B.	Offset	2.	*Bryophyllum*
C.	Sucker	3.	Ginger
D.	Leaf buds	4.	*Chrysanthemum*
		5.	*Eichhornia*

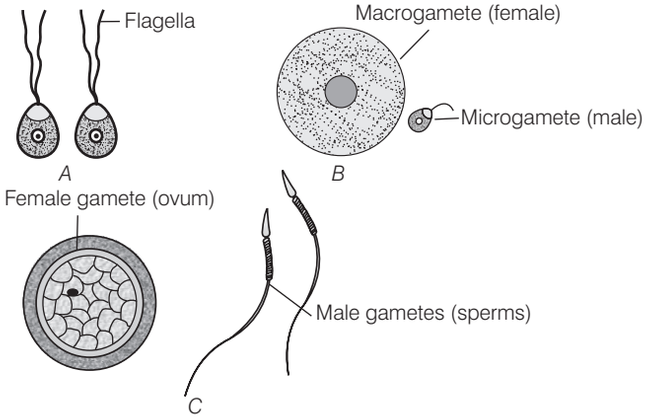
Codes

	A	B	C	D
(a)	3	4	1	2
(b)	4	5	2	3
(c)	3	5	4	2
(d)	2	1	5	4

37 Fertilised ovum in humans is implanted at a stage of development called

(a) morula (b) blastula
(c) gastrula (d) neurula

38 Identify the gametes in figure *A*, *B* and *C*.



(a) *A* – Heterogametes, *B* – Isogametes, *C* – Homogametes
(b) *A* – Homogametes, *B* – Isogametes, *C* – Heterogametes
(c) *A* – Isogametes, *B* – Heterogametes, *C* – Heterogametes
(d) *A* – Heterogametes, *B* – Heterogametes, *C* – Isogametes

39 Which of the following constitutes the accessory male genital gland of a mammal?

(a) Rectal gland
(b) Bartholin's gland
(c) Preputial gland
(d) Seminal vesicles and prostate gland

40 The outermost covering of the testes is called

(a) tunica propria (b) germinal epithelium
(c) tunica albuginea (d) peritoneum

41 Scrotal testes are absent in

(a) elephant (b) camel
(c) Rhesus monkey (d) horse

42 Abdominal testes are found in

(a) shrew (b) goat
(c) *Pteropus* (d) rabbit

43 Which option shows incorrectly matched group?

(a) Gemmules — *Spongilla* — Budding
(b) Pseudopodiospores — *Plasmodium* — Sporulation
(c) Zoospores — *Aspergillus* — Sporulation
(d) Conidia — *Penicillium* — Asexual reproduction

44 The hormone inhibin is secreted by

(a) Leydig cells
(b) mast cells
(c) Sertoli cells
(d) macrophage cells

45 Luteinisation of granulosa cells of the ovulated Graafian follicle is facilitated by

(a) endorphin (b) FSH
(c) LH (d) progesterone

46 Corpus luteum of the mammalian ovary is

(a) a degenerate structure
(b) a transient endocrine structure
(c) also called yellow body
(d) Both (b) and (c)

47 Menstrual cycle is

(a) seasonal hormonal ovarian change
(b) conditional hormonal ovarian change
(c) periodic hormonal ovarian change
(d) habitual hormonal ovarian change

48 Which of the following hormones are secreted by placenta?

(a) Relaxin, oestrogen and progesterone
(b) Oxytocin, oestrogen and progesterone
(c) FSH, LH and LTH
(d) Progesterone and FSH

49 Identify the hormone which is anti-FSH and anti-LH.

(a) Growth hormone (b) Progesterone
(c) Adrenaline (d) Thyroxine

50 Events in the sexual reproduction.

I. Pre-fertilisation II. Fertilisation
III. Post-fertilisation

The sequential order of their occurrence is

(a) I → III → II (b) II → I → III
(c) III → II → I (d) I → II → III

51. Which of the following is correct regarding the tapetum?

(a) It forms the outermost layer of microsporangium
(b) Multinucleate cells are present in tapetum
(c) The cells of tapetum develop fibrous thickenings on the inner and radial walls and become dead
(d) Microspore mother cells arise from tapetal cells

52 Which of the following statements is incorrect?

(a) Self-pollination is prevented through herkogamy
(b) In dichogamy, anthers and stigmas mature at different times in a bisexual flower so as to prevent self-pollination
(c) Two or three types of flowers with different heights of styles and stamens are present in heterostylic condition
(d) All statements are correct

53 Which of the following statements is false?

(a) Ubisch granules provide the exine material of pollen
(b) Of the four megaspores formed, only the one lying towards micropylar end is functional
(c) Pollen kit is a characteristic of entomophyllous plants
(d) Antipodal cells are found towards the chalazal end

54 Which of the following is not a procedure practiced in the tissue culture of plants?
(a) Shoot tip culture for micropropagation
(b) Leaf, stem and root culture for preparing cell suspension cultures
(c) Protoplast culture is done for genetic engineering of plants
(d) Culture of hybridised mature plant cells

55 Which of the following is most likely to be present before ovulation occurs?
(a) Corpus luteum, oestrogen, secretory uterine lining, follicle stimulating hormone
(b) LH, follicle, progesterone, thick uterine lining
(c) FSH, follicle, uterine lining becoming thick, oestrogen
(d) Luteinising hormone, corpus luteum, secretory uterine lining, progesterone

56 During pregnancy,
(a) the ovarian and uterine cycles occur frequently
(b) GnRH is produced at a higher level
(c) the ovarian and uterine cycles are absent
(d) female secondary sex characteristics are not continued

57 Follicle stimulating hormone
(a) is secreted in the females only
(b) stimulates the seminiferous tubules to produce sperm
(c) its secretion is controlled by gonadotropin releasing hormone
(d) Both (b) and (c)

58 Which of the following differences between spermatogenesis and oogenesis is incorrect?

	Spermatogenesis		Oogenesis
(a)	Occurs in males	–	Occurs in females
(b)	Produces four sperms per meiosis	–	Produces one egg per meiosis
(c)	Produces haploid cells	–	Produces diploid cells
(d)	It is completed each time	–	May not be completed every time

59 The sperm and egg are both produced by the process of meiosis, still they differ in
(a) each gene has an equal chance of ending up in a sperm, but has only 50% chance of being discarded in the polar body in egg production
(b) in the amount of cellular food supply they get
(c) in motility or movement
(d) All of the above

60 In humans, the foetus
(a) is surrounded by five extraembryonic membranes
(b) develops organs and appears like a human
(c) depends upon the placenta for excretion of wastes and uptake of nutrients
(d) Both (b) and (c)

61 An important feature of vegetative propagation is that
(a) it enables rapid production of different varieties
(b) it is used for producing a large population of individuals which are genetically similar to parent generation
(c) it ensures that the progeny are resistant to diseases and pests
(d) it is a very old practice

62 Double fertilisation is the fusion of male gamete with the
(a) egg cell
(b) antipodals
(c) two polar nuclei and their fusion product
(d) egg cell and another male gamete with two polar nuclei

63 The secondary nucleus of an angiosperm after fertilisation is
(a) 6*x* (b) 2*x*
(c) 3*x* (d) 5*x*

64 A pollen grain is best defined as a
(a) male gamete
(b) microspore mother cell
(c) partially developed male gametophyte
(d) partially developed zygote

65 Entrance of a pollen tube into an ovule through the micropyle is called
(a) porogamy (b) anisogamy
(c) chalazogamy (d) apogamy

66 Chemotropic movement of pollen tubes towards the micropylar end of the ovules is due to the presence of
(a) mucilaginous substances on the stigma
(b) florigen gradient through stylar tissue
(c) cytokinin gradient through stigmatic and stylar tissue up to embryo sac
(d) calcium gradient through stylar tissue up to embryo sac

67 Palynology is related to the study of morphology of
(a) pollen grains (b) palms
(c) extinct flowers (d) parthenocarpic fruits

68 Cross-pollination does not occur in
(a) allogamous flowers
(b) geitonogamous flowers
(c) cleistogamous flowers
(d) chasmogamous flowers

69 Male gametes are formed by
(a) pollen cell (b) generative cell
(c) pollen tube cell (d) pollen mother cell

70 Root of flowering plant has 24 chromosomes. Its gamete would carry chromosomes
(a) 4 (b) 8 (c) 12 (d) 24

71 Which one is surrounded by callose wall?
(a) Male gamete (b) Pollen grain
(c) Egg (d) Microspore mother cell

72 In human females, menstruation can be deferred by administration of
(a) FSH and LH
(b) oestrogen and progesterone
(c) FSH only
(d) LH only

73 Function of Sertoli cells is controlled by
(a) oestrogen (b) FSH
(c) testosterone (d) ACTH

74 Embryo at 16-celled stage is called
(a) morula (b) blastula
(c) blastomere (d) gastrula

75 Low level of progesterone and oestrogen stimulates the production of
(a) FSH-LH (b) LH
(c) GH (d) All of these

76 A Graafian follicle is
(a) a young developing follicle
(b) a mature follicle ready to ovulate
(c) a follicle undergoing PCD
(d) dead follicle

77 Match the following columns.

Column I	Column II
A. Shedding of endometrium	1. Menses (flow)
B. High levels of progesterone	2. Proliferative phase
C. Development of corpus luteum	3. Secretory (luteal) phase
D. Production of oestradiol by Graafian follicle	4. Ovulation

Codes

	A	B	C	D		A	B	C	D
(a)	1	3	4	2	(b)	3	1	4	2
(c)	3	1	2	4	(d)	1	2	4	3

78 The existence of sperm banks is an important consideration in which method of contraception?
(a) Condom
(b) Vasectomy
(c) Tubectomy
(d) Copper-T

79 High levels of progesterone will result in lowering of luteinising hormone levels. This is called
(a) the cascade effect
(b) negative feedback
(c) hermaphroditism
(d) positive feedback

80 Functional heterogamy and structural isogamy are exhibited by
(a) humans (b) apes
(c) *Spirogyra* (d) starfish

81 The two major wall layers of pollen grain are collectively termed as
(a) exine
(b) tectum
(c) intine
(d) sporoderm

82 Which of the following is not an example of the artificial propagation?
(a) Use of plant parts to develop whole plants
(b) Grafting
(c) Asexual production of seeds–Apomixis
(d) Production of fruit without fertilisation–Parthenocarpy

83 Propagation of economically important forest trees is done by which technique?
(a) Apomixis
(b) Layering
(c) Micropropagation
(d) Root cutting

84 The basal cell in a zygote
(a) forms the root of the embryo
(b) leads to the formation of suspensor that anchors the embryo and transfers nutrients
(c) is formed due to the fertilisation of polar and sperm nuclei
(d) gives rise to the two cotyledons

85 Which of the following is not correctly matched?
(a) Polar nuclei – Plumule
(b) Ovule – Seed
(c) Ovary – Fruit
(d) Egg and sperm – Zygote

86 In angiosperms, the formation of two male gametes from a pollen grain involves …… divisions.
(a) one meiotic and one mitotic
(b) two meiotic and two mitotic
(c) only two mitotic
(d) only two meiotic

87 In an ovule, the meiotic divisions take place in the
(a) nucellus
(b) microspore mother cells
(c) megaspore mother cells
(d) archesporium

88 Match the following columns.

Column I	Column II
A. Alecithal	1. Anterior pituitary
B. Prolactin	2. Female sterilisation
C. Tubectomy	3. Human egg
D. Vasectomy	4. Male sterilisation
	5. Isolecithal

Codes

	A	B	C	D
(a)	1	2	3	4
(c)	5	1	2	4

	A	B	C	D
(b)	3	1	2	4
(d)	2	1	3	5

89 Which of the following statements is not correct with respect to uterus?

(a) Implantation of a fertilised ovum takes place here
(b) It is the site of menstruation
(c) It is the site of ovulation
(d) Development of the foetus takes place here

90 Which of the following statements is the difference between oestrous and menstrual cycles?

(a) Only non-mammalian vertebrates have oestrous cycle
(b) The endometrial lining is shed in menstrual cycle but is reabsorbed in the oestrous cycle
(c) Oestrous cycle is more frequent than menstrual cycle
(d) Ovulation occurs before the endometrium develops in oestrous cycle

ANSWERS

1 (c)	**2** (b)	**3** (c)	**4** (d)	**5** (a)	**6** (d)	**7** (d)	**8** (b)	**9** (a)	**10** (b)
11 (a)	**12** (c)	**13** (b)	**14** (b)	**15** (d)	**16** (a)	**17** (c)	**18** (b)	**19** (a)	**20** (d)
21 (c)	**22** (d)	**23** (c)	**24** (d)	**25** (a)	**26** (c)	**27** (d)	**28** (b)	**29** (d)	**30** (b)
31 (a)	**32** (d)	**33** (d)	**34** (c)	**35** (d)	**36** (c)	**37** (b)	**38** (c)	**39** (d)	**40** (c)
41 (a)	**42** (a)	**43** (a)	**44** (c)	**45** (c)	**46** (d)	**47** (c)	**48** (a)	**49** (b)	**50** (d)
51 (b)	**52** (d)	**53** (b)	**54** (d)	**55** (c)	**56** (c)	**57** (d)	**58** (c)	**59** (d)	**60** (d)
61 (b)	**62** (d)	**63** (c)	**64** (c)	**65** (a)	**66** (d)	**67** (a)	**68** (c)	**69** (b)	**70** (c)
71 (d)	**72** (b)	**73** (b)	**74** (a)	**75** (a)	**76** (b)	**77** (a)	**78** (b)	**79** (b)	**80** (c)
81 (d)	**82** (d)	**83** (c)	**84** (b)	**85** (a)	**86** (c)	**87** (c)	**88** (b)	**89** (c)	**90** (b)