TOPIC 1: Asexual Reproduction

1. Each and every organism can live only for a certain period of time. The period from birth to the natural death of an organism represents its

   (A)Asexual reproduction (B)Sexual reproduction

   (C)Development **(D)**Life span

2. Whatever be the life span, death of every individual organisms is a certainty, i.e., no individual is immortal, except

   (A)Human beings

   (B)*Amoeba* and *Paramoecium*

   (C)Single-celled organisms

   (D) Both B and C

3. No individual is immortal then it is wondering that vast number of plant and animal species have existed on earth for several thousands of years. There must be some processes in living organisms that ensure this continuity. This process is called

   (A)Growth (B)Development

   (C) Reproduction (D)Fertilisation

4. Match the columns I and II, and choose the correct combination from the options given.

	Column I		**Column II**
1.	*Drosophila*	**a.**	1-2 weeks
2.	Butterfly	**b.**	2 weeks
3.	Crow	**c.**	15 years
4.	Parrot	**d.**	60 years
5.	Tortoise	**e.**	140 years
6.	Crocodile	**f.**	100-150 years

(A) b—1, a—2, e—3, c—4, d—5, f—6

(B) a—1, b—2, c—3, e—4, f—5, d—6

(C) a—1, b—2, e—3, c—4, d—5, f—6

(D) b—1, a—2, c—3, e—4, f—5, d—6

5. A biological process in which an organism gives rise to young ones (offspring) similar to itself is called

(A) Reproduction (B)Fertilisation

(C)Parthenogenesis (D)Gametogenesis

6. In the life span of any organism there is a cycle of

(A) Birth, growth and earth

(B)Birth , fertilization and death

(C)Juvenile, reproduction and senescence

(D)Pre-fertilisation, fertilization and post-fertilisation

7. Which one enables the continuity of the species generation after generation?

(A) Reproduction (B)Fertilisation

(C)Life-cycle (D)Life-span

8. There is a large diversity in the biological world and each organism has evolved its own mechanism to multiply and produce offspring. The method of reproduction depends upon

(A)Habitat of organism

(B)Internal physiology of organism

(C)Its will

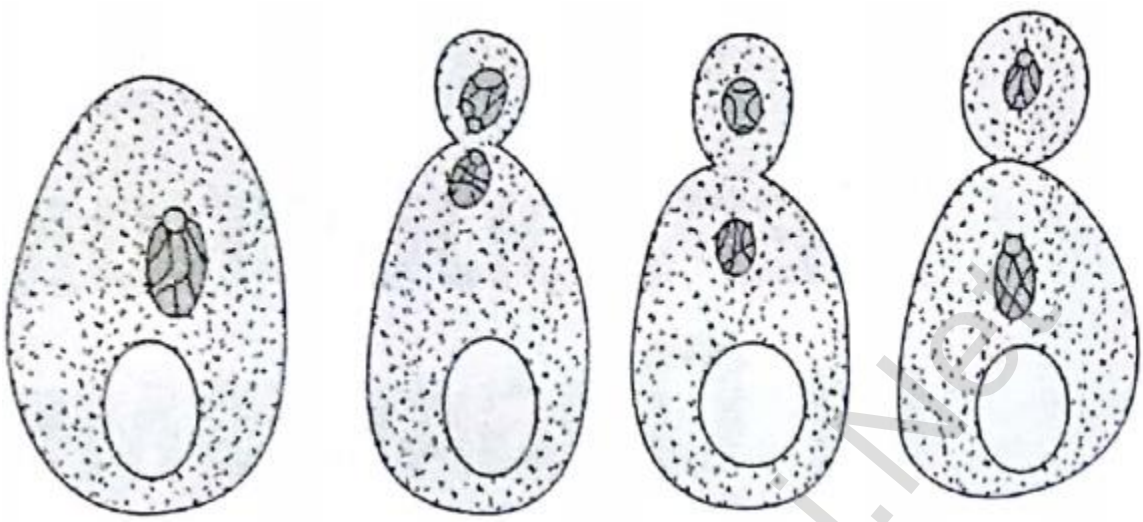
(D) Both A and B

9. When offspring is produced by a single parent with or without the involvement of gamete formation, the reproduction is called

(A) Asexual (B)Sexual

(C)Parthenogenetic (D)Either A or B

10. The following figure shows the



Parent cell

(A)Binary fission in *Amoeba*

(B)Budding in *Hydra*

(C)Equal budding in yeast

(D) Unequal budding in yeast

11. When two parents of opposite sex participate in the reproductive process and also involve fusion of male and female gametes, it is called

(A)Asexual reproduction

(B) Sexual reproduction

(C)Vegetative reproduction

(D)Parasexual reproduction

12. Read the following statements and find out the incorrect statement.

a.Asexual reproduction is common among single-celled organisms, and in plants and animals with relatively complex organizations.

b.In yeast, the division is unequal and small buds are produced that remain attached initially to the parent cell which eventually gets separated and mature into new yeast organism (cells).

c.Vegetative reproduction is also a type of asexual reproduction.

d.While in animals and other simple organisms the term vegetative reproduction is used unambiguously, in plants, the term asexual reproduction is frequently used.

e.Water hyacinth is also called 'Terror of Bengal.'

(A)a and d (B)b and c

(C)a and e (D)b and b

13. In plants, the vegetative propagation such as runner, rhizome, sucker, tuber, offset, bulb are all capable of giving rise to new offspring. These structures are called

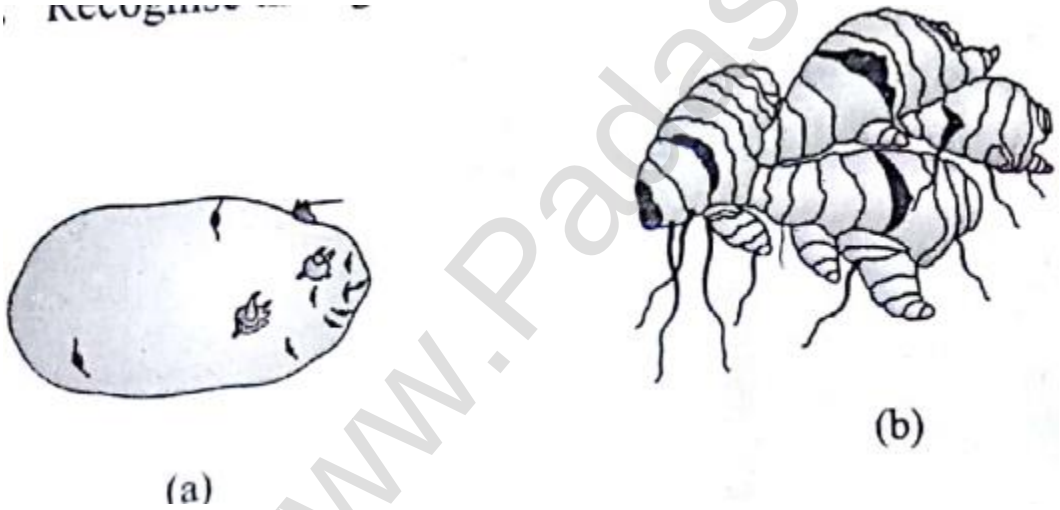
(A)Clones

(B)Grafts

(C) Vegetative propagules

(D)Adventitious buds

14. Recognise the figure and find out the correct matching.



(c)

(d)

(A)a—rhizome, b—eyes, c—leaf buds, d—bulbils

(B)b—rhizome, a—eyes, d—leaf buds, c—bulbils

(C)c—rhizome, d—eyes, a—leaf buds, b—bulbils

(D)b—rhizome, a—eyes, c—leaf buds, d—bulbils

15. In potato, sugarcane, banana, ginger and dahlia, the new plantlets invariably arises from

(A) The nodes present in the modified stems

(B)The nodes present in the modified roots

(C)The internodes present in the modified stems

(D)The margin of the leaves

16. In *Bryophyllum*, the buds that arises from the notches of margins of leaves are called

(A)Apical buds

(B)Axillary buds

(C) Adventitious buds

(D)Terminal buds

17. Fill in the blanks:

1.The ……..a……reproduction is the common mode of reproduction in organisms that have a relatively simple organization like algae and fungi and they shift to ……b……method of reproduction just before the onset of adverse conditions.

2.Asexual (vegetative) as well as sexual modes of reproduction or exhibited by the…….c…….

3.Only sexual mode of reproduction is present in most of the ……..d……

(A)a—sexual, b—asexual, c—higher plants, d—animals

(B)a—sexual, b—asexual, c—animals, d—higher plants

(C)a—asexual, b—sexual, c—higher plants, d—animals

(D)a—asexual, b—sexual, c—animals, d—higher plants

18. Match the columns and select the correct options.

Column I		**Column II**
Gemmule	p.	*Agave*
Leaf buds	q.	*Penicillum*
Bulbil	r.	Water Hyacinth
Offset	s.	Sponges
Conida	t.	*Bryophyllum*

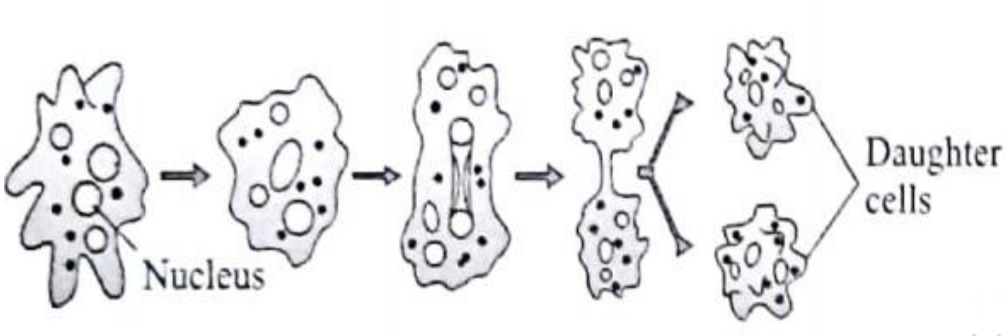
(A)a—s, b—t, c—p, d—r, e—q

(B)a—s , b—r, c—q, d—p, e—t

(C)a—r, b—t , c—s, d—q, e—p

(d)a—s, b—p, c—t, d—r, e—q

19. The following figure shows the



(A) Binary fission in *Amoeba*

(B)Budding in *Hydra*

(C)Equal budding in yeast

(D)Unequal budding in yeast

20. Find out wrongly matched pair.

(A)Tuber—Potato

(B) Leaf buds—Banana

(C)Offsets—Water Hyacinth

(D)Rhizone—Ginder

21. Which is not an example of vegetative propagule in angiosperms?

(A) Zoospores of *Chlamydomonas*

(B)Eyes of Patato

(C)Rhizone of Ginger

(D)Bulbil of Agave

TOPIC 2: Sexual Reproduction

Pre-fertilisation Events, Gametogenesis and Gamete Transfer

22. In several fungi and plants the bisexual condition is denoted by

(A) Homothallic and monoecious

(B)Heterothallic and monoecious

(C)Homothallic and dioecious

(D)Heterothallic and diecious

23. If male (staminate) and female (pistillate) flowers are present on the same plant/individual, this condition is called

(A) Monoecious (B)Dioecious

(C)Unisexual (D)Bisexual

24. Match the columns I and II, and choose the correct combination from the options given.

Column I		**Column II**
Sponge	a.	Monoecious
Leech	b.	Dioecious
Cockroach	c.	Hermaphrodite
Frog	d.	Unisexual
Date palm	e.	Bisexual

(A)a—1, e—2, b—3, b—5

(B)c—1, a—2, d—3, b—5

(C)e—1, c—2, b—3, b—5

(D) All of the above

25. If male and female are present on separate plants, it is called

(A)Monoecious **(B)**Dioecious

(C)Unisexual (D)Bisexual

26. A haploid parent produces gametes by ……a….., division while diploid parent prduces gametes by ……b……. division**.**

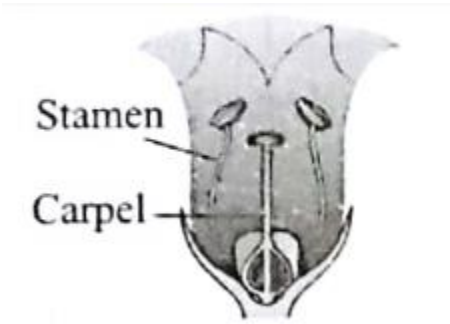
(A)a—mitotic, b—meiotic

(B)a—meiotic, b—meiotic

(C)a—meiotic, b—meiotic

(D)a—meiotic, b—amitotic

27. The following figure shows



(A)Monoecious flower of potato

(B)Bisexual flower of potato

(C)Dioecious flower of sweet potato

(D) Bisexual flower of sweet potato

28. Organisms belonging to pteridophytes, gymnosperms, angiosperms and most of the animals including human being

(A)Produce gametes by meiosis

(B)Produce gametes by mitosis

(C)Have diploid parental body

(D) Both A and C

29.

	Organism		**Sexuality**
a.	***Chara***	**1.**	**Monoecious**
b.	***Marchantia***	**2.**	**Dioecious**
c.	**Cucurbits**		
d.	***Cycas***		
e.	***Pinus***		

(A)a—1, b—2, c—1, d—2, e—1

(B)a—2, b—1, c—2, d—1, e—2

(C)a—1, b—2, c—1, d—1, e—2

(D)a—2, b—1, c—1, d—1, e—2

30. Chromosome number in endosperm cell of plant 'x' and the gamete of plant 'y' are equal. Plants 'x' and 'y' respectively are

(A)Apple and rice (B)Maize and potato

(C)Rice and onion **(D)**Onion and potato

31. Sexual reproduction involves formation of the male and female gametes by

(A)Same individual

(B)Different individuals of the same sex

(C)Different individuals of the same sex

(D) Either A or B

32. As compared to the asexual reproduction, the sexual reproduction is

(A) Elaborate, complex and slow process

(B)Elaborate, simple and fast process

(C)Diffused, complex and slow process

(D)Elaborate, simple and fast process

33. Read the following statements and find out the incorrect statement.

(A)Plant, animals and fungi differ so greatly in external morphology, internal structure and physiology when it comes to sexual mode of reproduction, they share a similar pattern.

(B)In annual and biennial plants, there is a clear cut vegetative, reproductive and senescent phase, but in the perennial species it is very difficult to clearly define these phases.

(C) In animals, the juvenile phase is followed by morphological and physiological changes prior to active reproductive behaviour.

(D)The females of the marsupial mammals exhibit cyclinal changes in the activites of varies and accessory ducts as well as hormones during the reproductive phase.

34. All organisms have to reach a certain state of growth and maturity in their life, before they can reproduce sexually. That period of growth is called the

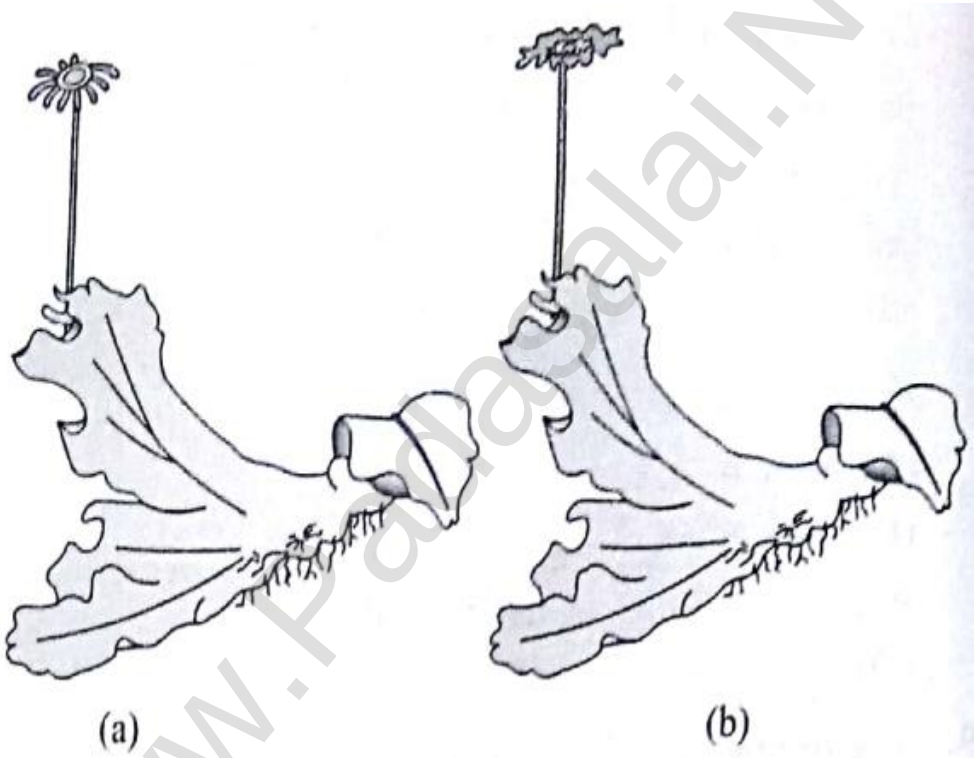
(A)Reproductive phase

(B)Senescent phase

(C)Vegetative phase in animals and juvenile phase in plants

(D) Vegetative phase in animals and juvenile phase in animals

35. Recognise the figure and find out the correct matching.



(A)a—female thallus, b—male thallus

(B)a—male thallus, b—female thallus

(C)a—antheridium, b—oogonium

(D)a—oogonium, b—antheridium

36. In some algae, the two gametes are so similar in appearance that is not possible to categorise them into male and female gametes. These gametes are called

(A)Isogametes (B)Heterogametes

(C)Homogametes **(D)**Both A and C

37. The end of juvenile/vegetative phase marks the beginning of the

(A) Reproductive phase (B)Senescent phase

(C)Flowering period (D)Maturation phase

38. Match the columns I and II, and choose the correct combination from the options given

Name		**Chromosome Number in gamete**
Butterfly	a.	6
Housefly	b.	39
Dog	c.	21
Cat	d.	19
Rat	e.	190

(A)a—1, b—2, c—3, e—4, d—5

(B)b—1, e—2, d—2, c—4, a—5

(C)e—1, a—2, b—3, d—4, c—5

(D)e—1, a—2, c—3, b—4, d—5

39. An angiospermic plants starts producing flower. This is the beginning of

(A)Juvenile phase (B)Vegetative phase

(C) Reproductive phase (D)Senescent phase

40. Which of the following is a parameter of senescence of old age?

(A)The end of reproductive phase

(B)Slowing of metabolism

(C)The end of juvenile phase

(D) Both A and B

41. Which of the following plant shows unusual flowering phenomenon?

(A)Bamboo and banana

(B)Banana and neelakarauji

(C) Bamboo and *Strobilanthus kunthiana*

(D)All of the above

42. *Strobilanthus kunthiana* flowers once in

(A)50-100 years (B)6 years

(C)12 years (D)18 years

43. *Strobilanthus kunthiana* is found in India in

(A) Kerla, Karnataka and Tamil nadu in India

(B)Karnataka, Tamil nadu and Odisha

(C)Kerla, Karnataka and Odisha

(D)Kerla, Karnataka and Maharashtra

44. Many mammals, especially those living in natural, wild conditions exhibit reproductive cycles only during favourable seasons in their reproductive phase and are therefore called

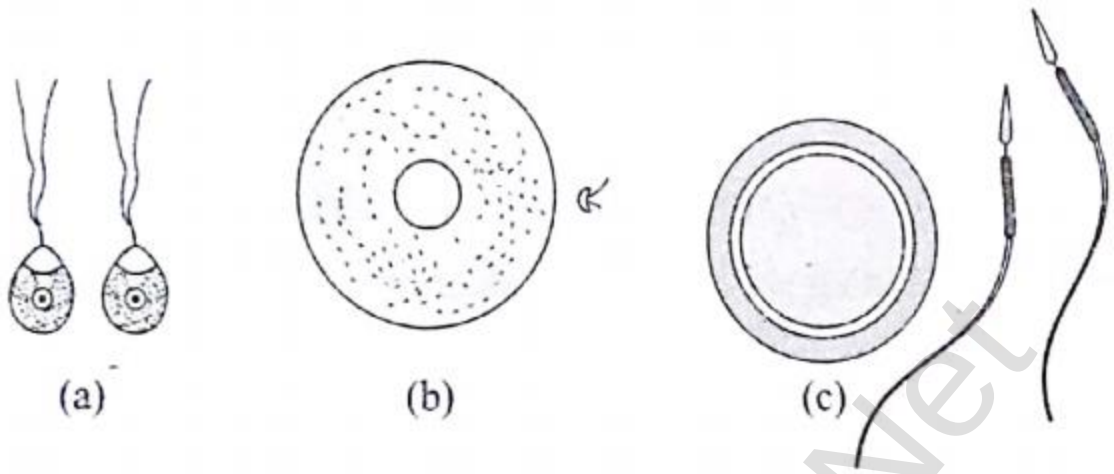
(A)Continuous breeders

(B) Seasonal breeders

(C)Reflex breeders

(D)Spontaneous breeders

45. Recognise the figure and find out the correct matching.



(A)a—heterogametes of *Cladophora,* b—heterogametes of *Homo sapiens,* c—isogametes of *Fucus*

(B)a—isogametes of *Fucus,* b—heteogametes of *Cladophora,* c—heterogametes, of humans

(C)a—isogametes of *Cladophora*, b—heterogametes of *Homo sapiens,* a—heterogametes of *Fucus*

(D)a—isogametes of *Cladophora,* b—heterogametes of *Fucus*, a—heterogametes of human beings

46. The birds/hens in captivity (as in poltry farms) can be made to lay eggs throughout the year. In this case, laying eggs is related to

(A)Reproduction

(B)Commercial exploitation

(C)Human welfare

(D) Both B and C

47. Transitions between the juvenile, reproductive and senescent phases in both plants and animals is maintained by

(A)Enzymes **(B)**Hormones

(C)Vitamins (D)All of the above

48. Interaction between ……. and certain environmental factors regulate the reproductive processes and the associated behavioural expression of organisms.

(A)Enzymes **(B)**Hormones

(C)Vitamins (D)All of the above

49. The sequential events in the sexual reproduction may be grouped into

(A)Two stages—gametogenesis and gamete transfer

(B)Three stages—gametogenesis and gamete transfer and fertilisation

(C)Two stages — gametogenesis and embryogenesis

(D) Three stages — pre fertilisation, fertilisation and post fertilisation events

50. Which of the following group uses water as medium for gamete transport?

a.Algae b.Bryophytes

c.Pteridophytes d.Gymnosperms

e.Angiosperms

(A)a, b and c (B)b, c and d

(C)c, d and e (D)b and c only

TOPIC 3 : Fertilisation and Post-Fertilisation Events

The Zygote and Embryogenesis

51. Read the following statements and find out the incorrect statement.

a.In majority of organisms, male gamete is motile and female gamete is non-motile (stationary).

b.In algae and fungi, both male and female gamets are non-motile.

c.In seed plants, pollen grains are the carrier of male gametes and ovule has the egg.

d.In dioecious plants, pollination facilitates transfer of pollen grains to the stigma.

e.In monoecious animals, since male and female gametes are formed in different individuals, the organism must evolve special mechanism for gamete transfer.

(A)b and e (B)a and d

(C)b and c (D)c and e

52. The most vital and cirtical event of the sexual reproduction is

(A)Gamete formation (B)Gamete transport

(C) Gamete fusion (D)Embryogenesis

53. Parthenogenesis is found in

a.Platyheminthes b.Rotifers

c.Some annelids d.Honeybees

e.Some lizards f.Cephalochordates

g.Turkey birds

(A)a, b, c and f (B)d, e and g

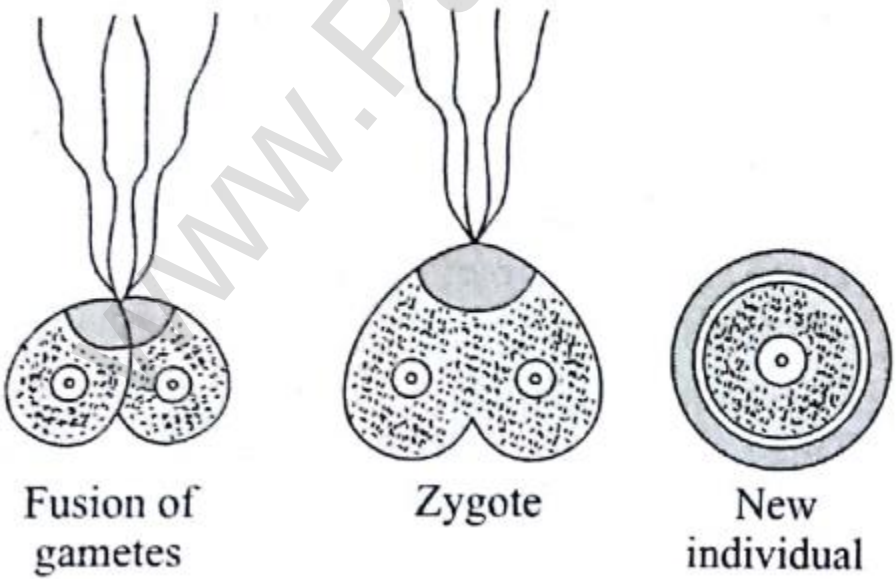
(C)a, b, c and d **(D)**b, d, e and g

54. In fungi, bryophytes and pteridophytes, the fertilisation is

(A)External **(B)**Internal

(C)Both A and B (D)Can't say

55. The following figure shows



(A)Heterogametic contact in humans

(B)Homogametic contact in humans

(C) Homogametic contact in alga

(D)Heterogametic contact in alga

56. In raptiles, birds, mammals, gymnosperms and angiosperms the fertilisation is

(A)External **(B)**Internal

(C)Both A and B (D)Can't say

57. Read the following statements and find out the incorrect statement.

(A) In organisms, exhibiting internal fertilisation the male gamete is non-motile but in seed plants the male gamete is motile.

(B)Organisms exhibiting external fertilisation show great synchrony between the sexes and release a large number of gametes into the water in order to enhance the chances of syngamy.

(C)In frogs and bony fishes, large number of offsprings are produced as they are extremely vulnerable to predators threatening their survival up to adulthood.

(D)In organism exhibiting internal fertilisation, even though the number of sperms produced is very large, there is a significant reduction in the number of eggs produced.

58. Which is the vital link that ensures continuity of species between organisms of one generation and the next?

(A)Sexual reproduction (B)Embryo

(C) Zygote (D)Fertilisation

59. In organism with haplontic life cycle, zygote divides by

(A)Mitosis to form haploid spores

(B)Meiosis to form gametes

(C)Mitosis to form gametes

(D) Meiosis to form haploid spores

60. Every sexually reproducing organism, including human beings begin life as a single cell called

(A)Gamete (B)Spore

(C)Embryo **(D)**Zygote

61. The process of the development of embryo from the zygote is called

(A)Gametogenesis (B)Sporogenesis

(C) Embryogenesis (D)Oogenesis

62. During embryogenesis, zygote undergtoes

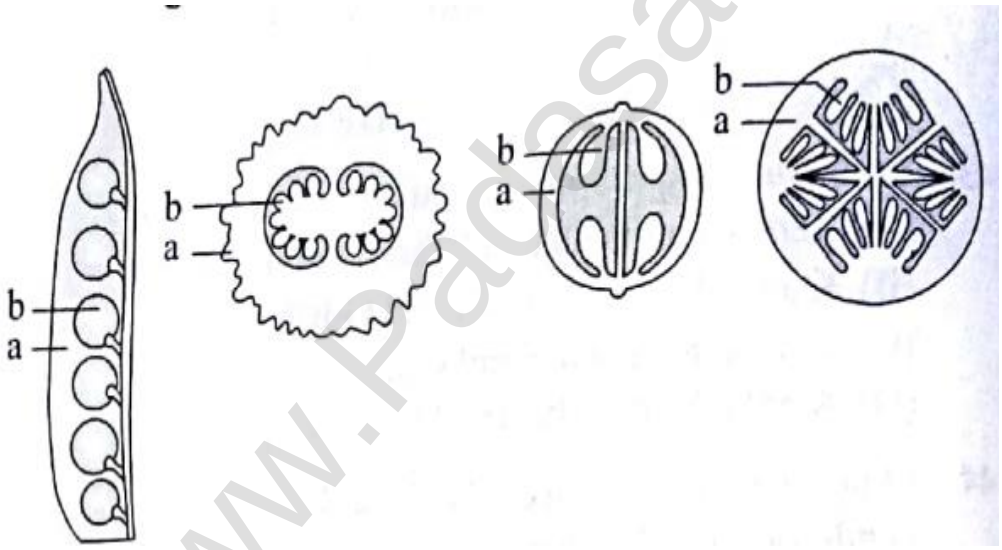
(A)Cell division (mitosis)

(B)Cell differentiation

(C)Meiosis/reduction division

(D) Both A and B

63. Recognise the figure and find out the correct matching.



(A)a—testa, b—tegmen (B)a—seed coat, b—seed

(C)a—fruit, b—seed **(D)**a—pericarp, b—seed

64. Animals in which development of zygote takes place outside the body of female parent and they lay fertilised/unfertilised egg are called

(A) Oviparous (B)Viviparous

(C)Ovoviviparous (D)Marsupials

65. Animals in which development of zygote takes place inside the body of female parent, i.e., they give birth to young ones are called

(A)Oviparous **(B)**Viviparous

(C)Ovoviviparous (D)Marsupials

66. Fertilised eggs covered by calcareous shells are found in

(A)Fishes and amphibians

(B)Reptiles, birds and mammals

(C)Amphibians, reptiles and birds

(D) Reptiles and birds

67. Asexual reproduction does not involve the

(A)Formation of gametes **(B)**Fusion of gametes

(C)Both A and B (D)None of the above

68. Which is incorrect about flowering plant?

(A)After fertilisation the ovary develops into fruit and ovules develops into seed

(B)The ovary wall after syngamy converted into pericarp which is protective in function

(C)The zygote is formed inside the ovule

(D) None of the above

69. External water is not requirted for fertilization of

(A)Pteridophytes (B)Bryophytes

(C)Thallophytes **(D)**Spermatophytes