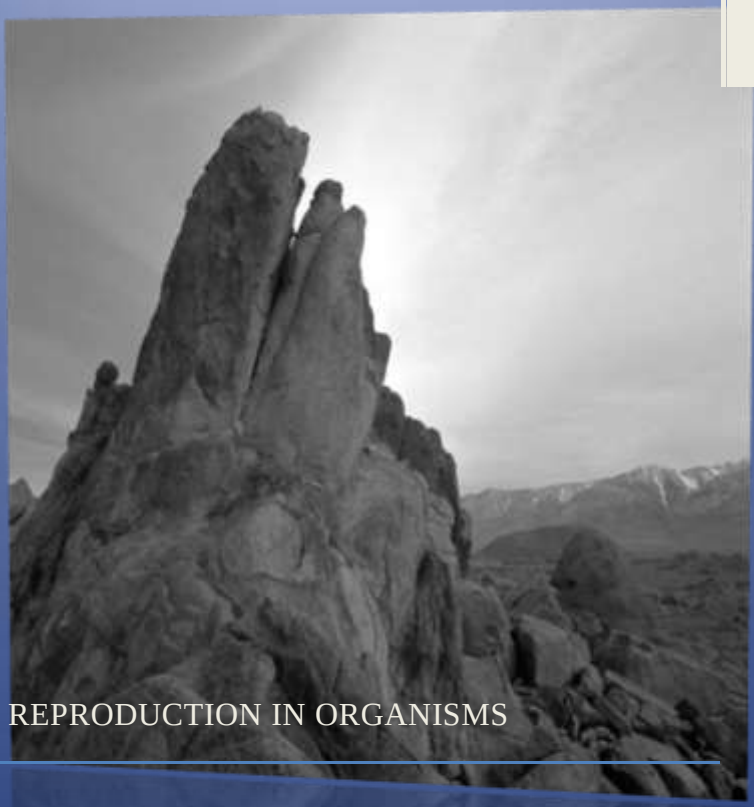
Gneet study



REPRODUCTION IN ORGANISMS

Topic wise Fact based MCQs forUG NEET exam

Solving fact-based questions in NEET exam preparation aids in strengthening fundamental knowledge, enhancing problem-solving abilities, and improving exam performance. Improves Recall and Retention, Fundamental Understanding

REPRODUCTION IN ORGANISMS

SET I Q1 to Q8 (Answer at the end of set)

Q1)What is the term used to describe the period from birth to the natural death of an organism?

a) Life cycle

b) Life span

c) Reproduction

d) Continuity

Q2) Which of the following statements is true regarding the correlation between life span and organism size?

a) Organism size is directly proportional to life span.

b) Organism size is inversely proportional to life span.

c) Organism size has no correlation with life span.

d) Organism size determines the cause of death.

Q3) Why do we say there is no natural death in single-celled organisms?

a) Single-celled organisms are immortal.

b) Single-celled organisms reproduce asexually.

c) Single-celled organisms do not undergo death.

d) Single-celled organisms have a short life span.

Q4) What process ensures the continuity of plant and animal species over thousands of years?

a) Growth and maturation

b) Genetic variation

c) Reproduction

d) Inheritance

Q5) What are the two types of reproduction based on the participation of organisms?

a) Asexual and sexual

b) Uniparental and biparental

c) Internal and external

d) Vegetative and spore formation

Q6)Which type of reproduction involves the fusion of male and female gametes?

a) Asexual reproduction

b) Sexual reproduction

c) Uniparental reproduction

d) Vegetative reproduction

Q7) What is the main purpose of reproduction in living organisms?

a) To ensure individual immortality

b) To increase the life span of organisms

c) To create genetic variations

d) To produce offspring and ensure species continuity

Q8) Which factor(s) determine(s) how organisms reproduce?

a) Habitat and external environment

b) Internal physiology of the organism

c) Both A and B

d) Reproduction is not influenced by any factors

ANSWERS SET I Q1 to Q8

Q1 Answer: b) Life span

Explanation: The life span of an organism represents the period from its birth to its natural death.

Q2 Answer: c) Organism size has no correlation with life span.

Explanation: The life spans of organisms are not necessarily correlated with their sizes. Examples like crows and parrots, which have similar sizes but different life spans, illustrate this lack of correlation.

Q 3 Answer: c) Single-celled organisms do not undergo death.

Explanation: Single-celled organisms do not experience natural death as they reproduce asexually, leading to the continuity of the species without individual death.

Q4 Answer: c) Reproduction

Explanation: Reproduction is the biological process by which organisms give rise to offspring similar to themselves, enabling the continuity of species generation after generation.

Q5 Answer: a) Asexual and sexual

Explanation: Reproduction can be classified into asexual reproduction, where offspring are produced by a single parent, and sexual reproduction, which involves the fusion of male and female gametes contributed by two parents.

Q6 Answer: b) Sexual reproduction

Explanation: Sexual reproduction involves the fusion of male and female gametes, which results in genetic variation and the production of offspring with a combination of traits from both parents.

Q7 Answer: d) To produce offspring and ensure species continuity

Explanation: Reproduction allows organisms to produce offspring that carry their genetic information, ensuring the continuity of the species over time.

Q8 Answer: c) Both A and B

Explanation: The mechanism of reproduction in organisms is influenced by their habitat, external environment, and internal physiological factors. These factors play a role in determining how organisms reproduce.

1.1 ASEXUAL REPRODUCTION

SET I Q9 to Q21

Q9) Asexual reproduction results in offspring that are:

a) Genetically identical to the parent

b) Genetically different from the parent

c) Genetically similar but not identical to the parent

d) Unable to reproduce

Q10) Which group of organisms commonly reproduces through binary fission?

a) Plants b) Animals

c) Fungi d) Protists and Monerans

Q11) In yeast, a form of asexual reproduction occurs through:

a) Multiple fission b) Encystation

c) Budding d) Sporulation

Q12) Which of the following is an example of a vegetative propagule in angiosperms?

a) Seeds

b) Flowers

c) Fruits

d) Rhizomes

Q13) Which term is used to describe individuals that are morphologically and genetically similar due to asexual reproduction?

a) Clones

b) Hybrids

c) Variants

d) Mutants

Q14) In which organisms is asexual reproduction common?

a) Mammals

b) Birds

c) Insects

d) Plants and animals with relatively simple organizations

Q15) What is the process called when a cell divides into two halves to give rise to new individuals?

a) Binary fission b) Budding

c) Sporulation d) Encystation

Q16) Which term describes the formation of a hard cyst around an Amoeba under unfavorable conditions?

a) Budding b) Sporulation

c) Encystation d) Fragmentation

Q17) What happens during sporulation in Amoeba?

a) The Amoeba divides by multiple fission

b) Small buds are produced that remain attached to the parent cell

c) The Amoeba forms a hard cyst around itself

d) The Amoeba produces gemmules

Q18) Which of the following is an example of vegetative propagules in angiosperms?

a) Seeds b) Flowers

c) Fruits d) Bulbils

Q19) Which type of reproduction involves the formation of specialized structures called conidia in fungi?

a) Binary fission b) Budding

c) Sporulation d) Fragmentation

Q20) Which of the following is an example of asexual reproduction in animals?

a) Fragmentation in sponges

b) Pollination in bees

c) Internal fertilization in mammals

d) Spore formation in birds

Q21) Which type of reproduction involves the production of gametes and the fusion of male and female gametes?

a) Sexual reproduction

b) Asexual reproduction

c) Binary fission

d) Budding

ANSWERS SET II Q9 to Q21

Q9 Answer: a) Genetically identical to the parent

Q10 Answer: d) Protists and Monerans

Q11 Answer: c) Budding

Q12 Answer: d) Rhizomes

Q13 Answer: a) Clones Explanation: Clones are individuals that are genetically identical to the parent and to each other, resulting from asexual reproduction.

Q14 Answer: d) Plants and animals with relatively simple organizations

Explanation: Asexual reproduction is more common in organisms with relatively simple organizations, such as single-celled organisms, plants, and some animals.

Q15 Answer: a) Binary fission

Explanation: Binary fission is the process in which a cell divides into two halves, and each half grows into a new individual. This type of reproduction is common in single-celled organisms like Amoeba and Paramecium.

Q16 Answer: c) Encystation

Explanation: Encystation refers to the process in which an Amoeba withdraws its pseudopodia and secretes a hard cyst around itself as a protective covering during unfavorable conditions.

Q17 Answer: a) The Amoeba divides by multiple fission

Explanation: During sporulation in Amoeba, the encysted Amoeba divides by multiple fission, producing many minute amoebae or pseudopodiospores. These spores are then released to grow into new Amoebae.

Q18 Answer: d) Bulbils

Explanation: Bulbils are specialized vegetative structures in angiosperms that can give rise to new plants. They are formed in the axils of leaves or as terminal buds and can develop into new individuals.

Q19 Answer: c) Sporulation

Explanation: Sporulation in fungi involves the formation of specialized structures called conidia, which are used for asexual reproduction. These conidia can germinate and give rise to new fungal individuals.

Q20 Answer: a) Fragmentation in sponges

Explanation: Fragmentation, where a part of the sponge breaks off and develops into a new individual, is an example of asexual reproduction in sponges.

Q21 Answer: a) Sexual reproduction

Explanation: Sexual reproduction involves the production of specialized cells called gametes by male and female individuals, followed by the fusion of these gametes to form a zygote and eventually give rise to offspring with genetic variation.

SET III Q22 to Q36

Q22) Is vegetative reproduction a type of asexual reproduction?

a) Yes, because it involves the production of offspring without the involvement of two parents.

b) No, because it requires the fusion of male and female gametes.

c) Yes, because it involves the formation of specialized asexual reproductive structures.

d) No, because it only occurs in animals and simple organisms.

Q23) Is the term "clone" applicable to the offspring formed by vegetative reproduction?

a) Yes, because the offspring are genetically identical to the parent.

b) No, because vegetative reproduction does not produce identical offspring.

c) Yes, but only in animals, not in plants.

d) No, because vegetative reproduction only occurs in simple organisms.

Q24) Which of the following is an example of a vegetative propagule?

a) Zoospore in fungi b) Conidia in algae

c) Buds in Hydra d) Gametes in plants

Q25) Why is sexual reproduction favored in organisms just before the onset of adverse conditions?

a) Sexual reproduction increases genetic variation, increasing the chances of survival.

b) Asexual reproduction is not possible during adverse conditions.

c) Sexual reproduction conserves energy and resources.

d) Asexual reproduction leads to the formation of weak offspring.

Q26) Which mode of reproduction is present in most animals?

a) Asexual reproduction

b) Vegetative reproduction

c) Binary fission

d) Sexual reproduction

Q27) Which organisms exhibit asexual reproduction more commonly?

a) Animals b) Plants

c) Fungi d) Protists

Q28) What is the main advantage of asexual reproduction?

a) It provides genetic variation.

b) It allows for rapid population growth.

c) It ensures the survival of the offspring.

d) It promotes species diversity.

Q29) Which term describes the process of producing new plants from specialized structures in plants?

a) Vegetative reproduction

b) Sexual reproduction

c) Fragmentation

d) Conidiation

Q30) What is the term used to describe the formation of new individuals from distinct pieces of the parent organism?

a) Sporulation b) Budding

c) Fragmentation d) Encystation

Q31) What is the main advantage of sexual reproduction?

a) It allows for rapid population growth.

b) It ensures genetic variation.

c) It conserves energy and resources.

d) It produces genetically identical offspring.

Q32) Which of the following is an example of asexual reproduction in plants?

a) Pollination in flowers b) Fertilization in trees

c) Budding in fungi d) Fragmentation in algae

Q33) What is the consequence of the rapid vegetative propagation of water hyacinth?

a) It leads to the death of fishes due to oxygen depletion.

b) It enhances biodiversity in water bodies.

c) It promotes the growth of beneficial aquatic plants.

d) It has no impact on the ecosystem.

Q34) What is the significance of nodes in the propagation of plants through vegetative reproduction?

a) Nodes produce specialized reproductive structures.

b) Nodes are sites where genetic variation occurs.

c) Nodes allow for the attachment of roots and new plantlets.

d) Nodes play no role in vegetative reproduction.

Q35) Which mode of reproduction is common in organisms with relatively simple organizations, such as algae and fungi?

a) Asexual reproduction

b) Sexual reproduction

c) Binary fission

d) Fragmentation

Q36) Is sexual reproduction the only mode of reproduction present in higher plants?

a) Yes, sexual reproduction is the only mode of reproduction in higher plants.

b) No, higher plants can reproduce both sexually and asexually.

c) Yes, higher plants can reproduce only through vegetative propagation.

d) No, higher plants can reproduce only through spore formation.

ANSWER SET III Q22 to Q36

Q22 Answer: a) Yes, because it involves the production of offspring without the involvement of two parents.

Explanation: Vegetative reproduction is a type of asexual reproduction as it produces offspring without the involvement of two parents. It relies on the propagation of specialized structures or propagules.

Q23 Answer: a) Yes, because the offspring are genetically identical to the parent.

Explanation: The term "clone" is applicable to the offspring formed by vegetative reproduction as they are genetically identical to the parent plant, resulting in a population of genetically identical individuals.

Q24 Answer: c) Buds in Hydra

Explanation: Buds in Hydra are an example of vegetative propagules, which can give rise to new individuals through asexual reproduction.

Q25 Answer: a) Sexual reproduction increases genetic variation, increasing the chances of survival.

Explanation: Sexual reproduction introduces genetic variation through the mixing of genetic material from two parents. This variation provides a higher likelihood of offspring having adaptations advantageous for survival during adverse conditions.

Q26) Answer: d) Sexual reproduction

Explanation: In most animals, the mode of reproduction is sexual reproduction, which involves the fusion of male and female gametes to produce offspring with genetic variation.

Q27 Answer: c) Fungi

Explanation: Among the given options, fungi exhibit asexual reproduction more commonly. However, it is important to note that asexual reproduction can occur in various organisms, including plants and some animals.

Q28 Answer: b) It allows for rapid population growth.

Explanation: Asexual reproduction allows for rapid population growth because a single parent can produce numerous offspring, resulting in a quick increase in population size.

Q29 Answer: a) Vegetative reproduction

Explanation: Vegetative reproduction is the process by which new plants are produced from specialized structures, such as runners, rhizomes, and bulbs, without the involvement of seeds or spores.

Q30 Answer: c) Fragmentation

Explanation: Fragmentation refers to the process in which an organism breaks into distinct pieces, and each piece can grow into a new individual capable of reproducing offspring.

Q31 Answer: b) It ensures genetic variation.

Explanation: Sexual reproduction introduces genetic variation through the recombination of genetic material from two parents. This variation provides a higher likelihood of adaptation and survival in changing environments.

Q32 Answer: c) Budding in fungi

Explanation: Budding is a form of asexual reproduction commonly observed in fungi, where a

small bud grows out of the parent organism and eventually detaches to form a new individual.

Q33 Answer: a) It leads to the death of fishes due to oxygen depletion.

Explanation: Water hyacinth, through its rapid vegetative propagation, can cover extensive areas of water bodies, depriving oxygen and sunlight for other aquatic organisms, leading to the death of fishes and disrupting the ecosystem.

Q34 Answer: c) Nodes allow for the attachment of roots and new plantlets.

Explanation: Nodes are specific points on a stem where buds, roots, or new plantlets can develop. They play a crucial role in the attachment and growth of new plants during vegetative reproduction.

Q35 Answer: a) Asexual reproduction

Explanation: Asexual reproduction is common in organisms with relatively simple organizations, including algae and fungi. These organisms predominantly reproduce asexually to increase their population size quickly.

Q36 Answer: b) No, higher plants can reproduce both sexually and asexually.

Explanation: Higher plants have the ability to reproduce through both sexual and asexual means. While sexual reproduction is predominant, vegetative propagation is another mode commonly observed in higher plants.

1.2 SEXUAL REPRODUCTION

SET IV Q37 to Q46

Q37) Sexual reproduction involves the fusion of:

a) Vegetative structures

b) Somatic cells

c) Male and female gametes

d) Asexual reproductive structures

Q38) The offspring produced through sexual reproduction are:

a) Genetically identical to the parents

b) Morphologically and physiologically similar to the parents

c) Genetically identical to each other

d) Morphologically and physiologically different from the parents and each other

Q39) What is the term used to describe the period of growth before an organism can reproduce sexually?

a) Juvenile phase b) Vegetative phase

c) Reproductive phase d) Mature phase

Q40) In plants, the inter-flowering period in species that flower more than once can be described as:

a) Juvenile phase b) Vegetative phase

c) Reproductive phase d) Mature phase

Q41) Why do some plants exhibit seasonal flowering while others flower throughout the year?

a) Seasonal availability of pollinators

b) Variation in environmental conditions

c) Genetic differences among plant species

d) Availability of water and nutrients

Q42) Which term describes the phase of growth in plants that marks the beginning of the reproductive stage?

a) Vegetative phase b) Juvenile phase

c) Reproductive phase d) Mature phase

Q43) Which plant species exhibits mass flowering once in its lifetime, generally after 50-100 years?

a) Bamboo b) Marigold

c) Apple tree d) Wheat plant

Q44) What is the name of the plant species known as "neelakuranji," which flowers once in 12 years and attracts tourists in certain regions of India?

a) Mango tree b) Apple tree

c) Strobilanthus kunthiana d) Banana plant

Q45) What is the reproductive behavior that follows the juvenile phase in animals?

a) Active feeding b) Dormancy

c) Active reproductive behavior d) Hibernation

Q46) What is the main difference between sexual and asexual reproduction?

a) Genetic variation

b) Involvement of gametes

c) Formation of identical offspring

d) Speed of the reproductive process

ANSWER SET IV Q37 to Q46

Q37 Answer: c) Male and female gametes

Explanation: Sexual reproduction involves the fusion of male and female gametes, resulting in the formation of a zygote and the development of a new organism.

Q38 Answer: d) Morphologically and physiologically different from the parents and each other

Explanation: Sexual reproduction results in offspring that are not identical to the parents or amongst themselves. The process of genetic recombination during sexual reproduction introduces variation, leading to morphological and physiological differences in the offspring.

Q39 Answer: a) Juvenile phase

Explanation: The period of growth before an organism can reproduce sexually is referred to as the juvenile phase. In plants, it is also known as the vegetative phase.

Q40 Answer: d) Mature phase

Explanation: In plants that flower more than once, the inter-flowering period can be described as the mature phase. It indicates the reproductive stage of the plant after reaching maturity.

Q41 Answer: b) Variation in environmental conditions

Explanation: Seasonal flowering in plants is influenced by environmental factors such as temperature, light, and moisture. Some plants have adaptations to flower during specific seasons to ensure optimal conditions for pollination and seed production, while others may have adaptations to

flower throughout the year depending on their habitat and ecological requirements.

Q42 Answer: c) Reproductive phase

Explanation: The reproductive phase in plants refers to the stage of growth when they begin to produce flowers and reproductive structures, enabling sexual reproduction.

Q43 Answer: a) Bamboo

Explanation: Bamboo species are known to exhibit mass flowering once in their lifetime, typically occurring after a long period of 50-100 years. This phenomenon results in the production of a large number of fruits, followed by the death of the bamboo plant.

Q44 Answer: c) Strobilanthus kunthiana

Explanation: Strobilanthus kunthiana, commonly known as "neelakuranji," is a plant species that flowers once in 12 years. The mass flowering of this

plant in hilly areas of Kerala, Karnataka, and Tamil Nadu attracts a large number of tourists.

Q45 Answer: c) Active reproductive behavior

Explanation: In animals, the reproductive phase follows the juvenile phase and is characterized by morphological and physiological changes that lead to active reproductive behavior. This behavior includes activities such as courtship, mating, and nesting.

Q46 Answer: a) Genetic variation

Explanation: The main difference between sexual and asexual reproduction is the introduction of genetic variation. Sexual reproduction involves the fusion of male and female gametes, resulting in offspring with genetic diversity, while asexual reproduction produces offspring that are genetically identical or nearly identical to the parent.

SET V Q47 to Q56

Q47) What are the changes seen in human beings that are indicative of reproductive maturity?

a) Slowing of metabolism and increased hormone production

b) Changes in the activities of ovaries and accessory ducts

c) Transition from the juvenile phase to the reproductive phase

d) Formation of zygote and embryogenesis

Q48) Do birds lay eggs all through the year in nature?

a) Yes, birds lay eggs throughout the year in nature.

b) No, birds lay eggs only seasonally in nature.

c) Birds do not lay eggs at all.

d) Birds lay eggs only during their juvenile phase.

Q49) What are the cyclical changes during reproduction called in non-primate mammals?

a) Oestrus cycle b) Menstrual cycle

c) Fertilization cycle d) Reproductive cycle

Q50) What is one parameter of senescence or old age?

a) Slowing of metabolism

b) Reproductive maturity

c) Transition to the juvenile phase

d) End of the reproductive phase

Q51) What are the three distinct stages of sexual reproduction?

a) Pre-fertilization, fertilization, and post-fertilization events

b) Juvenile phase, reproductive phase, and senescence phase

c) Formation of zygote, embryogenesis, and reproductive behavior

d) Hormone production, environmental factors, and behavioral expressions

Q52) What is the process characterized by the fusion of male and female gametes?

a) Fertilization b) Ovulation

c) Pollination d) Germination

Q53) What is the term used to describe the development of an embryo from a zygote?

a) Embryogenesis b) Reproduction

c) Germination d) Pollination

Q54) What regulates the reproductive processes and associated behaviors in both plants and animals?

a) Hormones b) Environmental factors

c) Genetic factors d) External stimuli

Q55) Which stage of sexual reproduction involves the formation of a zygote?

a) Fertilization b) Pre-fertilization

c) Post-fertilization d) Embryogenesis

Q56) What are the post-fertilization events in sexual reproduction?

a) Formation of male and female gametes

b) Development of reproductive structures

c) Formation of zygote and embryogenesis

d) Hormonal changes and behavioral expressions

ANSWER SET V Q47 to Q56

Q47 Answer: b) Changes in the activities of ovaries and accessory ducts

Explanation: In human beings, reproductive maturity is indicated by changes in the activities of

ovaries and accessory ducts, as well as hormonal changes during the reproductive phase.

Q48 Answer: b) No, birds lay eggs only seasonally in nature.

Explanation: Birds in nature lay eggs seasonally, typically during specific times of the year when environmental conditions are favorable for breeding and raising offspring.

Q49) Answer: a) Oestrus cycle

Explanation: In non-primate mammals like cows, sheep, rats, deers, dogs, and tigers, the cyclical changes during reproduction are called the oestrus cycle. It involves changes in the activities of ovaries, accessory ducts, and hormones.

Q50 Answer: d) End of the reproductive phase

Explanation: The end of the reproductive phase can be considered one of the parameters of senescence

or old age. Concomitant changes in the body occur during this phase, such as a slowing of metabolism.

Q51 Answer: a) Pre-fertilization, fertilization, and post-fertilization events

Explanation: The three distinct stages of sexual reproduction are the pre-fertilization events (leading up to the fusion of gametes), fertilization (fusion of male and female gametes to form a zygote), and post-fertilization events (including embryogenesis and subsequent development).

Q52 Answer: a) Fertilization

Explanation: Fertilization is the process characterized by the fusion of male and female gametes, resulting in the formation of a zygote.

Q53 Answer: a) Embryogenesis

Explanation: Embryogenesis is the term used to describe the process of development and differentiation of an embryo from a zygote.

Q54 Answer: a) Hormones

Explanation: Hormones play a crucial role in regulating the reproductive processes and associated behaviors in both plants and animals. They interact with environmental factors to orchestrate the reproductive events.

Q55 Answer: a) Fertilization

Explanation: Fertilization is the stage of sexual reproduction that involves the fusion of male and female gametes, resulting in the formation of a zygote.

Q56 Answer: c) Formation of zygote and embryogenesis

Explanation: Post-fertilization events in sexual reproduction include the formation of a zygote through the fusion of gametes and subsequent embryogenesis, leading to the development of a new organism.

1.2.1 PRE-FERTILISATION EVENTS

SET VI Q57 to Q66

Q57) What is the process of formation of male and female gametes called?

a) Fertilization b) Gametogenesis

c) Reproduction d) Embryogenesis

Q58) In sexually reproducing organisms, what are the two morphologically distinct types of gametes called?

a) Homogametes b) Heterogametes

c) Isogametes d) Ova and sperm

Q59) What term is used to describe the condition where both male and female reproductive structures are present in the same plant?

a) Homothallic b) Heterothallic

c) Bisexual d) Unisexual

Q60) In flowering plants, what are the male and female flowers called when they are present on the same individual?

a) Staminate and pistillate

b) Monoecious and dioecious

c) Hermaphroditic and unisexual

d) Homothallic and heterothallic

Q61) What term is used to describe animals that possess both male and female reproductive organs?

a) Homothallic b) Heterothallic

c) Unisexual d) Hermaphrodites

Q62) What is the term used to describe the process of haploid cells developing into haploid gametes?

a) Meiosis b) Mitosis

c) Gametogenesis d) Fertilization

Q63) In which type of organisms is meiosis required to produce haploid gametes?

a) Haploid organisms

b) Diploid organisms

c) Homothallic organisms

d) Monoecious organisms

Q64 What is the term used to describe organisms that possess both male and female reproductive organs?

a) Homothallic b) Heterothallic

c) Hermaphrodites d) Monogamous

Q65) What is the term used to describe plants that have separate male and female flowers on the same individual?

a) Dioecious b) Bisexual

c) Monogamous d) Homothallic

Q66) Which type of gametes are formed in male and female flowers, respectively?

a) Ova and sperm

b) Antherozoids and ova

c) Sperm and ova

d) Pollen grains and eggs

ANSWER SET VI Q57 to Q66

Q57 Answer: b) Gametogenesis

Explanation: Gametogenesis refers to the process of formation of male and female gametes. It involves the development and maturation of haploid cells, which are the reproductive cells involved in sexual reproduction.

Q58 Answer: b) Heterogametes

Explanation: In sexually reproducing organisms, the two morphologically distinct types of gametes are

called heterogametes. The male gamete is known as the antherozoid or sperm, while the female gamete is known as the ovum or egg.

Q59 Answer: c) Bisexual

Explanation: The term bisexual is used to describe the condition in which both male and female reproductive structures are present in the same plant. It indicates that the plant is capable of self-fertilization.

Q60 Answer: b) Monoecious and dioecious

Explanation: In flowering plants, when both male and female flowers are present on the same individual, it is referred to as monoecious. When male and female flowers are present on separate individuals, it is referred to as dioecious.

Q61 Answer: d) Hermaphrodites

Explanation: Animals that possess both male and female reproductive organs are referred to as

hermaphrodites. They have the ability to produce both male and female gametes and can engage in self-fertilization.

Q62 Answer: c) Gametogenesis

Explanation: Gametogenesis is the process by which haploid cells develop into haploid gametes. It involves the differentiation and maturation of cells into specialized reproductive cells.

Q63 Answer: b) Diploid organisms

Explanation: Meiosis is required to produce haploid gametes in diploid organisms. Diploid organisms have two sets of chromosomes, and meiosis is a process of cell division that reduces the chromosome number by half, resulting in haploid gametes.

Q64 Answer: c) Hermaphrodites

Explanation: Hermaphrodites are organisms that possess both male and female reproductive organs.

They have the ability to produce both male and female gametes and can engage in self-fertilization.

Q65 Answer: b) Bisexual

Explanation: Bisexual is the term used to describe plants that have separate male and female flowers on the same individual. It indicates that the plant has both male and female reproductive structures.

Q66 Answer: c) Sperm and ova

Explanation: In male flowers, sperm (antherozoids or pollen grains) are formed, while in female flowers, ova (eggs) are formed. These gametes are involved in the sexual reproduction of plants.

SET VII Q67 to Q74

Q67) What is the haploid chromosome number in a house fly?

a) 12 b) 6 c) 24 d) 8

Q68) What is the diploid chromosome number in a dog?

a) 156 b) 78 c) 39 d) 1560

Q69) How many chromosomes are present in the gametes of a cat?

a) 9 b) 19 c) 38 d) 76

Q70) What is the diploid chromosome number in Ophioglossum, a fern?

a) 630 b) 1260 c) 315 d) 3150

Q71) How many chromosomes are present in the gametes of an apple?

a) 34 b) 68 c) 17 d) 8

Q72) What is the diploid chromosome number in rice?

a) 12 b) 6 c) 24 d) 48

Q73) How many chromosomes are present in the gametes of a butterfly?

a) 380 b) 760 c) 190 d) 95

Q74 What is the diploid chromosome number in an onion?

a) 8 b) 4 c) 16 d) 32

ANSWER SET VII Q67 to Q74

Q67 Answer: a) 12

Explanation: The chromosome number in a house fly's meiocyte (diploid) is 12, which means the haploid chromosome number in its gametes is also 12.

Q68 Answer: b) 78

Explanation: The chromosome number in a dog's meiocyte is 78, indicating that it is a diploid organism. The haploid chromosome number in its gametes is not provided.

Q69 Answer: b) 19

Explanation: The chromosome number in a cat's meiocyte is not provided, but the haploid chromosome number in its gametes is given as 19.

Q70 Answer: a) 630

Explanation: The chromosome number in Ophioglossum's meiocyte is not provided, but the haploid chromosome number in its gametes is 630.

Q71 Answer: d) 8

Explanation: The chromosome number in an apple's meiocyte is 34, and the haploid chromosome number in its gametes is not provided.

Q72 Answer: d) 48

Explanation: The chromosome number in rice's meiocyte is not provided, but the haploid chromosome number in its gametes is given as 12.

Therefore, the diploid chromosome number is double that value, which is 48.

Q73 Answer: a) 380

Explanation: The chromosome number in a butterfly's meiocyte is 380, and the haploid chromosome number in its gametes is not provided.

Q74 Answer: c) 16

Explanation: The chromosome number in an onion's meiocyte is not provided, but the haploid chromosome number in its gametes is given as 8. Therefore, the diploid chromosome number is double that value, which is 16.

1.2.1.2 GAMETE TRANSFER

SET VIII Q75 to Q81

Q75) In which organisms are both male and female gametes motile?

a) Animals b) Plants

c) Fungi d) Algae

Q76) What is the medium through which gamete transfer takes place in algae, bryophytes, and pteridophytes?

a) Soil b) Air

c) Water d) Pollen grains

Q77) What are the carriers of male gametes in seed plants?

a) Pollen grains b) Stigma

c) Ovules d) Anthers

Q78) In self-fertilizing plants, how do pollen grains reach the stigma?

a) Through wind dispersal

b) Through animal pollinators

c) Through contact with the stigma

d) Through water transport

Q79 What is the specialized event that facilitates the transfer of pollen grains to the stigma in cross-pollinating plants?

a) Germination b) Fertilization

c) Pollination d) Discharge

Q80) How do pollen tubes reach the ovule in plants?

a) Through wind dispersal

b) Through animal pollinators

c) Through water transport

d) They germinate on the stigma and grow towards the ovule

Q81 How do dioecious animals transfer gametes?

a) Through wind dispersal

b) Through animal pollinators

c) Through water transport

d) They have a specialized mechanism for gamete transfer

ANSWER SET VIII Q75 to Q81

Q75 Answer: d) Algae

Explanation: In a few fungi and algae, both male and female gametes are motile, allowing them to meet and fuse.

Q76 Answer: c) Water

Explanation: In algae, bryophytes, and pteridophytes, water serves as the medium through which male gametes move to reach the stationary female gametes.

Q77 Answer: a) Pollen grains

Explanation: Pollen grains are the carriers of male gametes in seed plants. They need to be transferred to the stigma in order to facilitate fertilization.

Q78 Answer: c) Through contact with the stigma

Explanation: In self-fertilizing plants, such as peas, the anthers and stigma are located close to each other, allowing the pollen grains to easily come in contact with the stigma.

Q79 Answer: c) Pollination

Explanation: In cross-pollinating plants, including dioecious plants, the transfer of pollen grains to the stigma is facilitated by a specialized event called pollination.

Q80 Answer: d) They germinate on the stigma and grow towards the ovule

Explanation: After pollen grains germinate on the stigma, pollen tubes are formed, which carry the male gametes and grow towards the ovule to discharge the male gametes near the egg.

Q81 Answer: d) They have a specialized mechanism for gamete transfer

Explanation: In dioecious animals, which have male and female gametes formed in different individuals, there is a need for a specialized mechanism for gamete transfer to bring the gametes together for fertilization.

1.2.2 FERTILISATION

SET IX Q81 to Q90

Q81)What is the most vital event of sexual reproduction?

a) Syngamy b) Fertilization

c) Gamete fusion d) Parthenogenesis

Q82)What is the term used to describe the phenomenon where the female gamete develops into new organisms without fertilization?

a) Parthenogenesis

b) External fertilization

c) Internal fertilization

d) Syngamy

Q83) In most aquatic organisms, where does syngamy occur?

a) Inside the body of the organism

b) In the external medium (water)

c) Through pollen tubes

d) Inside the female gamete

Q84) Which type of gametic fusion is associated with the release of a large number of gametes into the surrounding medium to enhance syngamy?

a) External fertilization b) Internal fertilization

c) Parthenogenesis d) Pollination

Q85) In organisms exhibiting internal fertilization, how do the male gametes reach the female gamete?

a) Through pollen tubes

b) By external release into water

c) Through internal copulation

d) By direct fusion within the female body

Q86 What is the process by which non-motile male gametes are carried to the female gamete in seed plants?

a) Parthenogenesis b) Pollination

c) External fertilization d) Internal copulation

Q87) What is the major disadvantage of external fertilization?

a) Low chances of syngamy

b) Limited offspring production

c) Decreased genetic diversity

d) Increased vulnerability to predators

Q88) In organisms exhibiting internal fertilization, which gamete shows a significant reduction in numbers?

a) Female gamete (egg)

b) Male gamete (sperm)

c) Both gametes are reduced in numbers

d) Neither gamete is reduced in numbers

Q89) In which type of organisms does parthenogenesis occur?

a) Aquatic organisms

b) Terrestrial organisms

c) Both aquatic and terrestrial organisms

d) None of the above

Q90) What is the advantage of internal fertilization over external fertilization?

a) Higher genetic diversity

b) Greater number of offspring produced

c) Increased protection for the offspring

d) Improved chances of syngamy

ANSWERS SET IX Q81 to Q90

Q81Answer: c) Gamete fusion

Explanation: Gamete fusion, which occurs during syngamy or fertilization, is considered the most vital event in sexual reproduction.

Q82 Answer: a) Parthenogenesis

Explanation: Parthenogenesis refers to the development of new organisms from the female gamete without fertilization.

Q83 Answer: b) In the external medium (water)

Explanation: Syngamy in most aquatic organisms takes place in the external medium, which is typically water.

Q84 Answer: a) External fertilization

Explanation: External fertilization is characterized by the release of numerous gametes into the surrounding medium to increase the chances of syngamy. This is observed in organisms such as bony fishes and frogs.

Q85 Answer: c) Through internal copulation

Explanation: In organisms exhibiting internal fertilization, male gametes reach the female gamete through internal copulation, where the male reproductive organ transfers the sperm to the female reproductive tract.

Q86 Answer: b) Pollination

Explanation: In seed plants, non-motile male gametes are transported to the female gamete by pollination. This is achieved through the transfer of pollen grains, which contain the male gametes, to the female reproductive structure.

Q87 Answer: d) Increased vulnerability to predators

Explanation: External fertilization exposes the offspring to a higher risk of predation since they are released into the external medium, making them more vulnerable compared to internal fertilization.

Q88 Answer: a) Female gamete (egg)

Explanation: In organisms with internal fertilization, there is typically a significant reduction in the number of eggs produced compared to the large number of sperm. This is due to the larger size and higher resource requirement of the female gametes.

Q89 Answer: b) Terrestrial organisms

Explanation: Parthenogenesis, the phenomenon where the female gamete develops into new organisms without fertilization, is observed in certain terrestrial organisms like rotifers, honeybees, lizards, and birds. It does not occur in aquatic organisms.

Answer: c) Increased protection for the offspring

Explanation: Internal fertilization offers increased protection for the offspring compared to external fertilization. In internal fertilization, the fusion of gametes occurs inside the body of the organism, providing a more controlled and sheltered environment for the developing offspring, reducing their vulnerability to predation.

1.2.3 POST-FERTILISATION EVENTS

SET X Q90 to Q

Q90) What is the process of development of an embryo from the zygote called?

a) Gametogenesis b) Fertilization

c) Embryogenesis d) Zygogenesis

Q90 Answer: c) Embryogenesis

Explanation: Embryogenesis refers to the process of development of an embryo from the zygote through cell division (mitosis) and cell differentiation.

Q91) In organisms with external fertilization, where is the zygote formed?

a) Inside the female body

b) In the external medium (water)

c) In the male body

d) In specialized reproductive structures

Q91 Answer: b) In the external medium (water)

Explanation: In organisms with external fertilization, such as aquatic organisms, the zygote is formed in the external medium, typically water.

Q92) What happens during cell differentiation in embryogenesis?

a) Cell divisions increase the number of cells

b) Groups of cells undergo modifications to form specialized tissues and organs

c) Zygote develops a thick wall

d) Zygote divides by meiosis to form haploid spores

Q92Answer: b) Groups of cells undergo modifications to form specialized tissues and organs

Explanation: During embryogenesis, cell differentiation occurs, where groups of cells undergo specific modifications to form specialized

tissues and organs necessary for the development of the organism.

Q93)Which type of animals lay fertilized eggs outside the body of the female parent?

a) Oviparous animals

b) Viviparous animals

c) Haplo-diplontic animals

d) Diploid animals

Q93 Answer: a) Oviparous animals

Explanation: Oviparous animals, such as reptiles and birds, lay fertilized eggs outside the body of the female parent. These eggs are typically covered by a hard calcareous shell and undergo incubation before the young ones hatch.

Q94 What is the term used for animals that give birth to young ones after the zygote develops inside the body of the female organism?

a) Oviparous animals

b) Viviparous animals

c) Haplo-diplontic animals

d) Diploid animals

Q94 Answer: b) Viviparous animals

Explanation: Viviparous animals, including the majority of mammals (including humans), give birth to young ones after the zygote develops inside the body of the female organism.

Q95 In flowering plants, which part develops into the fruit?

a) Sepals b) Petals

c) Stamen d) Ovary

Q95 Answer: d) Ovary

Explanation: In flowering plants, the ovary develops into the fruit. The ovary wall, called the pericarp,

becomes thick and protective, serving as the fruit's outer covering.

Q96) In flowering plants, where is the zygote formed?

a) Inside the sepals b) Inside the petals

c) Inside the stamen d) Inside the ovule

Q96 Answer: d) Inside the ovule

Explanation: In flowering plants, the zygote is formed inside the ovule, which is located within the pistil of the flower.

Q97) What happens to the sepals after fertilization in flowering plants?

a) They remain attached

b) They wither and fall off

c) They develop into the fruit

d) They develop into the seed

Q97Answer: b) They wither and fall off

Explanation: After fertilization in flowering plants, the sepals wither and fall off, while other parts, such as the pistil and ovary, continue their development.

Q98) Which plant exhibits the retention of sepals after fertilization?

a) Rose b) Lily

c) Orchid d) Sunflower

Q98Answer: c) Orchid

Explanation: Orchids are plants in which the sepals often remain attached even after fertilization. This is a unique characteristic compared to many other flowering plants.

Q99) What happens to the zygote in flowering plants?

a) It develops into the fruit

b) It develops into the ovule

c) It undergoes meiosis to form spores

d) It undergoes mitosis to form the embryo

Q99 Answer: d) It undergoes mitosis to form the embryo

Explanation: In flowering plants, the zygote undergoes mitosis to form the embryo, which develops within the ovule. The ovule itself develops into the seed, and the ovary develops into the fruit.

Q100) Which of the following processes is involved in the formation of a zygote?

a) Meiosis b) Mitosis

c) Gametogenesis d) Fertilization

Answer: d) Fertilization

Explanation: The formation of a zygote occurs through the process of fertilization. Fertilization is

the fusion of gametes (sperm and egg) to form a diploid zygote, which is the first step in the development of a new individual in sexual reproduction.