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CUET (UG) - BIOLOGY

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Reproduction

UNIT
1

SYLLABUS

REPRODUCTION IN ORGANISMS

REPRODUCTION, A CHARACTERISTIC FEATURE OF ALL ORGANISMS FOR CONTINUATION OFSPECIES; MODES OF REPRODUCTION – ASEXUAL & SEXUAL; ASEXUAL REPRODUCTION; MODES- BINARY FISSION, SPORULATION, BUDDING, GEMMULE, FRAGMENTATION; VEGETATIVE PROPAGATION IN PLANTS.

SEXUAL REPRODUCTION IN FLOWERING PLANTS

FLOWER STRUCTURE; DEVELOPMENT OF MALE & FEMALE GAMETOPHYTES; POLLINATION–TYPES, AGENCIES & EXAMPLES; OUTBREEDINGS DEVICES; POLLEN-PISTIL INTERACTION; DOUBLE FERTILIZATION; POST FERTILIZATION EVENTS– DEVELOPMENT OF ENDOSPERM & EMBRYO, DEVELOPMENT OF SEED & FORMATION OF FRUIT; SPECIAL MODES – APOMIXIS, PARTHENOCARPY, POLYEMBRYONY; SIGNIFICANCE OF SEED & FRUIT FORMATION.

HUMAN REPRODUCTION

MALE & FEMALE REPRODUCTIVE SYSTEMS; MICROSCOPIC ANATOMY OF TESTIS & OVARY; GAMETOGENESIS-SPERMATOGENESIS & OOGENESIS; MENSTRUAL CYCLE; FERTILISATION, EMBRYO DEVELOPMENT UPTO BLASTOCYST FORMATION, IMPLANTATION; PREGNANCY & PLACENTA FORMATION (ELEMENTARY IDEA); PARTURITION (ELEMENTARY IDEA); LACTATION (ELEMENTARY IDEA).

REPRODUCTIVE HEALTH

NEED FOR REPRODUCTIVE HEALTH & PREVENTION OF SEXUALLY TRANSMITTED DISEASES (STD); BIRTH CONTROL-NEED & METHODS, CONTRACEPTION & MEDICAL TERMINATION OF PREGNANCY (MTP); AMNIOCENTESIS; INFERTILITY & ASSISTED REPRODUCTIVE TECHNOLOGIES – IVF, IUI, ZIFT, GIFT (ELEMENTARY IDEA FORGENERAL AWARENESS).

NUMBER OF QUESTIONS ASKED IN CUET (UG) BIOLOGY (2022 to 2024)				
Reproduction		**2022**	**2023**	**2024**
1	Reproduction in Organisms	-	2	1
2	Modes of Reproduction	1	2	-
3	Sexual Reproduction in Flowering Plants	6	11	9
4	Human Reproduction	11	4	12
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CHAPTER 1

REPRODUCTION

Unit 1.1: Reproduction in Organisms

Reproduction, a characteristic feature of all organisms for continuation of species;

[26 MAY 2023 Shift-1]

1. Which of the following is not a cyanobacteria?
(1) Nostoc
(2) Glomus
(3) Anabaena
(4) Oscillatoria

[23 JUNE 2023 Shift-3]

2. Cell division itself a mode of reproduction in organisms like:
(A) Yeast
(B) Amoeba
(C) Paramecium
(D) Fruit Fly
Choose the correct answer from the options given below:
(1) (A) Only
(2) (B) & (D) Only
(3) (D) Only
(4) (A), (B) & (C) Only

[OFFLINE 29 MAY 2024 Shift 1]

3. Which one is the correct example of hermaphrodites?
(1) Tapeworm and leech
(2) Cockroach and frog
(3) Cockroach and earthworm
(4) Carp fish and pigeon

Answer Key		
1	**2**	**3**
(2)	(4)	(1)

EXPLANATION

1. Correct Answer is (2):- Glomus is a type of fungus, while Nostoc, Anabaena, and Oscillatoria are all types of cyanobacteria.

2. Correct Answer is (4):-
(A) Yeast can reproduce by budding (a form of cell division).
(B) Amoeba reproduces by binary fission, where the cell divides into two.
(C) Paramecium also reproduces by binary fission, where the organism divides into two.

3. Correct Answer is (1):- Tapeworm and leech. Hermaphrodites are organisms that have both male and female reproductive organs.
Tapeworm: It has both male and female reproductive organs in each individual, enabling self-fertilization or cross-fertilization.
Leech: Similarly, leeches are hermaphroditic, with both reproductive organs present in each individual.
Other options:
- Cockroach and frog (2) are not hermaphrodites; they have separate sexes (male and female).
- Cockroach and earthworm (3): Earthworms are hermaphrodites, but cockroaches are not.
- Carp fish and pigeon (4) are sexually dimorphic, with distinct male and female sexes.

Unit 1.2: Modes of Reproduction

- **Asexual and Sexual; Asexual Reproduction;**
- **Modes- Binary Fission, Sporulation, Budding, Gemmule, Fragmentation; Vegetative Propagation in Plants.**

[26 MAY 2023 Shift-1]

1. Out of the following, which one is not a hermaphrodite?

(1) Sponge (2) Earthworm
(3) Leech (4) Cockroach

[23 JUNE 2023 Shift-3]

2. The vegetative propagation in Agave is called:

(1) Leaf buds (2) Offset
(3) Bulbil (4) Rhizome

[ONLINE 23 Aug 2022]

3. Vegetative propagation in Eicchornia and Pistia occurs by _____

(1) Sucker (2) Offset
(3) Runner (4) Stolon

Answer Key		
1	**2**	**3**
(4)	(3)	(2)

EXPLANATION

1. Correct Answer is (4):- Hermaphrodites are organisms that have both male and female reproductive organs. Cockroach: Cockroaches are not hermaphrodites. They have separate sexes, with distinct male and female individuals.

2. Correct Answer is (3):- Agave reproduces vegetatively through bulbils, which are small, bulb-like structures that develop on the plant. These bulbils can grow into new plants, allowing Agave to propagate asexually.

3. Correct Answer is (2):- Both Eichhornia (water hyacinth) and Pistia (water lettuce) are aquatic plants that reproduce asexually through offsets. An offset is a small plantlet that grows from the parent plant, and when it matures, it can detach and grow into a new independent plant. This mode of reproduction allows for rapid population growth in these aquatic plants.

MOCK TEST

1

MOCK TEST

1. In angiosperms, the outer wall of ovary develops into:

(1) Perisperm (2) Pericarp
(3) Periderm (4) Sporoderm

2. Match List - I with List - II.

List - I	List - II
(A) Buds	(I) Chlamydomonas
(B) Conidia	(II) Sponge
(C) Gemmules	(III) Hydra
(D) Zoospores	(IV) Penicillium

Choose the correct answer from the options given below:

(1) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
(2) (A)-(I), (B)-(III), (C)-(IV), (D)-(II)
(3) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
(4) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

3. Identify the set of cells which have haploid number of chromosomes?

(1) Egg cell and Synergid cell
(2) Egg cell and Nucellar cell
(3) Zygote and Egg cell
(4) Zygote and Antipodal cell

4. In Vallisneria, the pollination is carried by:

(1) Wind (2) Water
(3) Insects (4) Animals

5. Leydig cells secrete:

(1) Gonadotropin Releasing Hormone (GnRH)
(2) Follicle Stimulating Hormone (FSH)
(3) Androgens
(4) Estrogen

6. Arrange the following in correct sequence with respect to the events of menstrual cycle:

(A) Development of primary follicle to graafian follicle
(B) Attainment of peak level in luteinising hormone
(C) Release of ovum by graafian follicle
(D) Formation of corpus luteum

Choose the correct answer from the options given below:

(1) (A), (B), (D), (C) (2) (B), (D), (A), (C)
(3) (A), (C), (D), (B) (4) (A), (B), (C), (D)

7. The following are the natural methods of contraception except:

(1) Lactational amenorrhea
(2) Coitus interruptus
(3) Intra Uterine Devices (IUD)
(4) Periodic Abstinence

8. Match List - I with List - II.

List - I	List - II
(A) ZIFT	(I) Transfer of an ovum from a donor into the fallopian tube of another female,
(B) GIFT	(II) Semen collection from husband/ healthy donor is artificially introduced into the uterus of the female
(C) IUT	(III) Transfer of zygote or embryo of upto 8 blastomeres into fallopian tube
(D) IUI	(IV) Transfer of embryo with more than 8 blastomeres into uterus

Choose the correct answer from the options given below:

(1) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
(2) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
(3) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)
(4) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

9. Thalassaemia is a:

(1) Bone disease (2) Blood disease
(3) Eye disease (4) Respiratory disease

10. ABO blood group is an example of:

(1) Single allele (2) Multiple alleles
(3) Single gene (4) Two genes

11. Match List - I with List - II.

List - I	List - II
(A) Down's syndrome	(I) $44 + XX/XY$
(B) Klinefelter's syndrome	(II) $44 + XO$
(C) Turner's syndrome	(III) $44 + XXY$
(D) Normal human	(IV) $45 + XX/XY$

ANSWER KEY									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(2)	(3)	(1)	(2)	(3)	(4)	(3)	(3)	(2)	(2)
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
(3)	(3)	(2)	(2)	(2)	(2)	(3)	(2)	(1)	(4)
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
(2)	(4)	(4)	(1)	(3)	(3)	(3)	(2)	(3)	(4)
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
(3)	(1)	(1)	(4)	(2)	(3)	(3)	(1)	(3)	(1)
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
(2)	(3)	(1)	(3)	(4)	(1)	(3)	(4)	(3)	(2)

EXPLANATION

1. Correct Answer is (2):- In angiosperms, the outer wall of the ovary develops into the **pericarp**. The pericarp is the fruit wall and consists of three layers: the exocarp (outer layer), mesocarp (middle layer), and endocarp (inner layer), which together protect the seeds and aid in their dispersal.

2. Correct Answer is (3):- (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(A) Buds are commonly associated with organisms like **Hydra**, which reproduce by budding.

(B) Conidia are produced by fungi such as **Penicillium**.

(C) Gemmules are produced by organisms like **sponges**.

(D) Zoospores are typically produced by algae such as **Chlamydomonas**.

3. Correct Answer is (1):- The haploid number of chromosomes means having only one set of chromosomes (n). In angiosperms, haploid cells are typically the result of meiosis, which occurs in the gametes. Egg cell and Synergid cell: Both egg cells and synergid cells are formed from meiotic division and are haploid (n).

4. Correct Answer is (2):- In Vallisneria, a type of aquatic plant, pollination is carried out by water. This plant is known for its hydrophilous pollination mechanism, where the male flowers float on the water's surface and the female flowers, which are submerged, receive pollen carried by the water.

5. Correct Answer is (3):- Leydig cells are specialized cells found in the testes, and they secrete androgens, primarily testosterone. Testosterone is responsible for the development of male secondary sexual characteristics, such as increased muscle mass, deepening of the voice, and the growth of facial and body hair.

6. Correct Answer is (4):-

(A) Development of primary follicle to Graafian follicle: The menstrual cycle begins with the development of primary follicles, which eventually mature into Graafian follicles.

(B) Attainment of peak level in luteinizing hormone (LH): Just before ovulation, there is a surge in LH levels, which is critical for triggering the release of the egg.

(C) Release of ovum by Graafian follicle: The Graafian follicle ruptures and releases the ovum (egg), a process known as ovulation.

(D) Formation of corpus luteum: After ovulation, the ruptured follicle transforms into the corpus luteum, which secretes progesterone to support a potential pregnancy.

7. Correct Answer is (3):- The natural methods of contraception include lactational amenorrhea, coitus interruptus, and periodic abstinence. These methods rely on behavioral or physiological changes to prevent pregnancy. Intrauterine Devices (IUDs), however, are not a natural method; they are mechanical devices inserted into the uterus to prevent pregnancy.

8. Correct Answer is (3):- (A)-(III), (B)-(II), (C)-(IV), (D)-(I).

(A) ZIFT → (III): Transfer of zygote or embryo (up to 8 blastomeres) into the fallopian tube.

(B) GIFT → (I): Transfer of an ovum from a donor into the fallopian tube of another female.

(C) IUT → (IV): Transfer of embryo (more than 8 blastomeres) into the uterus.

(D) IUI → (II): Semen collection from husband/healthy donor introduced into the uterus.

9. Correct Answer is (2):- Thalassemia is a blood disease. It is a genetic disorder that affects the production of hemoglobin, leading to anemia and other blood-related complications.

10. Correct Answer is (2):- The ABO blood group system is an example of multiple alleles. There are three different alleles involved in determining the ABO blood type:

- A allele
- B allele
- O allele

These alleles combine in various ways to produce the four possible blood types: A, B, AB, and O**.**

CUET UG BIOLOGY MOCK TEST 1

ANSWER SHEET

Name _____

Seat Number

Booklet Code

A

Medium

E

Marks Obtained

ANSWER COLUMNS

Checked By _____

Q. No.	ANSWER ①	②	③	④
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○
6	○	○	○	○
7	○	○	○	○
8	○	○	○	○
9	○	○	○	○
10	○	○	○	○
11	○	○	○	○
12	○	○	○	○
13	○	○	○	○
14	○	○	○	○
15	○	○	○	○
16	○	○	○	○
17	○	○	○	○
18	○	○	○	○
19	○	○	○	○
20	○	○	○	○
21	○	○	○	○
22	○	○	○	○
23	○	○	○	○
24	○	○	○	○
25	○	○	○	○

Q. No.	ANSWER ①	②	③	④
26	○	○	○	○
27	○	○	○	○
28	○	○	○	○
29	○	○	○	○
30	○	○	○	○
31	○	○	○	○
32	○	○	○	○
33	○	○	○	○
34	○	○	○	○
35	○	○	○	○
36	○	○	○	○
37	○	○	○	○
38	○	○	○	○
39	○	○	○	○
40	○	○	○	○
41	○	○	○	○
42	○	○	○	○
43	○	○	○	○
44	○	○	○	○
45	○	○	○	○
46	○	○	○	○
47	○	○	○	○
48	○	○	○	○
49	○	○	○	○
50	○	○	○	○

Note : Roll Number, Subject Code & Centre Code Should Be Filled In the Boxes Using The Pattern Given As :