6.REPRODUCTION IN ANIMALS

TEACHING TASK

NEET LEVEL QUESTIONS

Multi correct answer type:

1. The production of new organism which is not exact of parent is due to
   A) Asexual reproduction B) Vegetaive propagation
   C) Cloning D) Sexual Reproduction

Key: D

Solution: In sexual reproduction, mixing of male and female gametes produces off-spring with variations, so they are not exact copies.

2. Variations are possible in
   A)Multiple fission B)SexualReproduction
   C) Budding D) Schizogony

Key: B

Solution: Sexual reproduction involves fusion of gametes, which leads to genetic variation.

3. The position of testes during early foetal life
   A) Scrotal sacs
   B) Thoracic cavity
   C) With in abdominal cavity near the Kidneys
   D) With in the inguinal canals

Key: C

Solution: Initially the testes form in the abdominal cavity near the kidneys and later descend.

4. Sperms are produced in
   A) Seminiferous tubules B) Intestinal cells
   C) Vas defens D) Prostate glands

Key: A

Solution: The seminiferous tubules of testes are the actual sites of sperm production.

5. The sperms are stored temporarily in
   A) Seminiferous tubules B) Scrotum
   C) Vas efferentia D) Epididymes

Key: D

Solution: The epididymis stores and matures sperms before they move into the vas deferens.

6. Permanant cessation of ovulation is called
   A) Amenorrhea B) Menopause C) Menarche D) Dysmenorrhoe

Key: B

Solution: Menopause is the natural stoppage of ovulation and menstruation in women.

7. In mammals the fertilization occurs in

A) Uterus B) Cervix of uterus

C) Infundibulum D) Fallopian tubes

Key: D

Solution: Fertilization commonly takes place in the fallopian tube (oviduct), especially the ampulla region.

8. Colostrum is the

A) frist milk B) first semen C) first saliva D) Blood

Key: A

Solution: Colostrum is the yellowish first milk rich in antibodies, given by the mother soon after childbirth.

9. Menstruation is caused by

A) Increase in FSH level B) Fall in oxytocin level

C) Fall in progesterone level D) Increase in oestrogen level

Key: C

Solution: When progesterone level drops, the uterine lining breaks down and menstruation begins.

10. The ovulation occurs

A) About 28th day after mensus

B) About 2nd day after mensus

C) About 14th day after mensus

D) About 10th day after completion of menstrual bleeding

Key: C

Solution: In a normal 28-day cycle, ovulation takes place around the 14th day.

ADVANCED LEVEL QUESTIONS

Multi correct answer type:

11. Find the correct statement

i. Male sex cells are called sperms

ii. A sperm flagella will not help in locomotion

iii. Ovary lie in the abdomen

iv. Sperm is called as spermatozoan

A) i & ii B) ii, iii & iv C) i & iv D) iii & iv

Key: C

Solution:

• Male gametes are called sperms.

• Each sperm is also called spermatozoan.

• Statement ii is false because sperm flagella help in movement.

• Statement iii is true but not paired with i in correct option.

12. Find the incorrect statement

i. Fertilisation occurs in ovaries

ii. Female reproductive organ is testosterone

iii. Fusion of male and female gametes is called sexual reproduction

iv. Release of egg or ovum is called ovulation

A) iii & iv B) i & iv C) ii & iv D) i & ii

Assertion And Reason Type

A) Both Assertion and Reason are True, and Reason is the correct

explanation for Assertion.

B) Both Assertion and Reason are True, but Reason is NOT the correct explanation for Assertion.

C) Assertion is True, but Reason is False.

D) Assertion is False, but Reason is True.

Key: D

Solution:

• Statement i is incorrect – fertilisation occurs in fallopian tubes, not ovaries.

• Statement ii is incorrect – female reproductive organ is ovaries, not testosterone (male hormone).

• Statements iii and iv are correct.

13. **Assertion :** sperms are formed from four primary spermatocytes.
Reason : Acrosome is formed by the golgi apparatus and contains lytic enzyme hyaluronidase

Key: D

Solution:

• Assertion is false – Each primary spermatocyte gives rise to four sperms, not four primary spermatocytes.

• Reason is true – Acrosome is formed by Golgi apparatus and contains enzymes that help the sperm penetrate the egg.

14. **Assertion :** In humans, the eggs are microlecithal .
Reason : The nourishment needed for the embryonic development is provided by the mother through placenta

Key: A

Solution:

• Both Assertion and Reason are true, and Reason correctly explains the Assertion.

• Human eggs are microlecithal (contain very little yolk) because early embryonic development depends on maternal supply via the placenta.

<u>Match the following :</u>

15.

1)Menstrual cycle	( )	a) 280 days
2)Gestation period	( )	b) Faloopian tubes
3)Life span of sperm	( )	c) 28 - 30 days
4)Fertilisation	( )	d) 24 hours

A)1-c,2-d,3-b,4-a B)1-c,2-a,3-d,4-b

C)1-d,2-c,3-a,4-b D)1-c,2-d,3-a,4-b

Key: B

Solution:

• Menstrual cycle lasts 28–30 days $\rightarrow$1-c

• Gestation period in humans is 280 days $\rightarrow$2-a

• Life span of sperm is about 24 hours $\rightarrow$3-d

• Fertilisation occurs in fallopian tubes $\rightarrow$ 4-b

16.

1)Human egg	( )	a) Internal fertilisation
2)Uterus	( )	b) External fertilisation
3)Fish	( )	c) 0.15 mm
4)Cat, Dog	( )	d) Female

A)1-c,2-d,3-b,4-a B)1-d,2-b,3-c,4-a

C)1-d,2-c,3-a,4-b D)1-c,2-d,3-a,4-b

Key: A

Solution:

• Human egg is about 0.15 mm →1-c

• Uterus belongs to female ? 2-d"• Fish reproduce by external fertilisation → 3-b

• Cat and Dog reproduce by internal fertilisation → 4-a 1-c

• Uterus belongs to female → 2-d

• Fish reproduce by external fertilisation → 3-b

• Cat and Dog reproduce by internal fertilisation → 4-a

Comprehensive :

17. The reproductive cycle in the primates is called menstrual cycle. The menstrual cycle is applied to cyclicaly changes that occur in the endometrium every month. The first menstruation begins at puberty and is called menarche. In human females menstruation is repeated at an average interval of about 28 - 29 days. One ovum is relased (Ovulation) during the middle of each menstruation. The major event of the menstrual cycle are menstrual phase , follicular phase, ovulatory phase and luteal phase.

i. During menstrual cycle changes occur in

A) Uterus B) Ovary C) Ovum D) Endometrium

Key: D

Solution: The menstrual cycle involves cyclical changes in the endometrium (lining of the uterus) every month.

ii. Menstruation begins during

A) Child hood B) Infancy C) Puberty D) Adulthood

Key: C

Solution: The first menstruation occurs at puberty and is called menarche.

iii. The word 'Mensem'

A) Week B) Month C) Year D) 15 days

Key: B

Solution: 'Mensem' means month, as the menstrual cycle repeats roughly every 28–29 days.

iv. The release of ovum is called

A) Ovulation B) Oogenesis

C) Spermatogenesis D) None

Key: A

Solution: Ovulation is the process where one ovum is released from the ovary during the middle of the menstrual cycle.

v. Arrange the following in an order

A) Menstrual phase, Follicular phase, Ovulatory phase, Luteal phase

B) Follicular phase, Ovulatory phase, Menstrual phase,, Luteal phase

C) Ovulatory phase, Follicular phase, Menstrual phase,Luteal phase

D) Luteal phase,Ovulatory phase, Follicular phase, Menstrual phase

Key: A

Solution: The correct order of menstrual cycle phases is:

Menstrual phase – shedding of endometrium

Follicular phase – follicle matures""Ovulatory phase – ovum is released

Luteal phase – corpus luteum forms

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS

1. Internal fertilisation occurs in
   A) in female body B) outside female body
   C) in male body D) outside male body

Key: A

Solution: In internal fertilisation, sperm and egg meet inside the female reproductive tract.

2. The number of nuclui present in a zygote is
   A) none B) one C) two D) four

Key: C

Solution: A zygote forms after fusion of male and female gametes, so it contains two nuclei initially (male + female pronuclei), which soon fuse into one nucleus.

3. Fertilisations results immediately in the formation of
   A) a zygote B) an embryo C) a placenta D) a foetus

Key: A

Solution: Fertilisation of sperm and egg forms a zygote, the first cell of a new organism.

4. Which of the following is not a part of the human male productive system?
   A) testis B) oviducts
   C) seminal vesicles D) epididymis

Key: B

Solution: Oviducts (fallopian tubes) are part of the female reproductive system, not male.

5. Reproduction is essential for living organisms in order to
   A) keep the individual organisms alive
   B) fulfill their energy requirements
   C) maintain growth
   D) continue the species for ever

Key: D

Solution: Reproduction ensures continuity of the species, not survival of individual organisms.

6. One of the following occur in the reproductive system of flowering plants as well as
   that of humans.This is :
   A) sperm ducts B) anther C) ovary D) style

Key: C

Solution: The ovary is the female reproductive organ in both humans and flowering plants.

7. In human males,the testes lie in the scrotal sac outside the body because it helps in the:
   A) process of mating B) formation of sperms
   C) easy transfer of sperms D) Maintain low temperature of testis

Key: D

Solution: Testes are outside the body to maintain a temperature slightly lower than body temperature, which is essential for sperm production.

8. In humans, one matured egg is released in to oviduct every __ by one of the ovaries.
   A) every day B) every week C) every month D) every year

Key: C

Solution: Ovulation occurs once a month, typically around day 14 of the menstrual cycle.

9. The cells involved in sexual reproduction are called .
   A) gametogenesis B) gametes C) both A and B D) none

Key: B

Solution: Gametes (sperms and eggs) are the cells that participate in sexual reproduction.

10. The process of __ ensures continuity of life on earth
    A) reproduction B) regeneration C) production D) deduction

Key: A

Solution: Reproduction allows species to survive and continue over generations.

11. Fusion of gametes gives rise to a single cell called
    A) embryo B) baby C) zygote D) all of these

Key: C

Solution: Fusion of male and female gametes forms a zygote, the first cell of a new individual.

12. The process of fusion of gametes is
    A) internal fertilisation B)fertilisation
    C) external fertilisation D)none

Key: B

Solution: Fertilisation is the union of male (sperm) and female (egg) gametes, forming a zygote, which is the first cell of a new organism. Internal or external refers to where fertilisation occurs, but the actual fusion is called fertilisation.

13. The other name of egg is
    A) ovary B)uterus C) oviduct D)ovum

Key: D

Solution: The egg cell is called an ovum, which is the female gamete that carries half the genetic material needed for a new individual.

14. A sperm is much ____ than the egg cell.
    A) smaller B)larger C) tiny D) big

Key: A

Solution: Sperm is much smaller than the egg. It is microscopic and motile, designed to reach and fertilise the egg, while the egg is large and non-motile containing cytoplasm to nourish early embryo.

15. The diameter of a human egg cell?
    A) 0.05mm B) 0.15mm C) 0.115mm D)0.015mm

Key: B

Solution: The human ovum is about 0.15 mm in diameter. It is the largest cell in the human body, visible under a microscope.

16. One of the following is not a part of human female reproductive system. This one is

A) ovary B)uterus C) scrotal sac D) oviducts

Key: C

Solution: Scrotal sac is a male reproductive organ that houses testes. The female system consists of ovaries, uterus, oviducts (fallopian tubes), and vagina.

17. The egg cells and sperm cells can be seen by the help of .

A) compound microscope B) high power magnifying lens

C) microscope D) electron microscope

Key**: A**

Solution: A compound microscope is sufficient to view human gametes.

• Sperm cells are motile and very small (0.0005 mm)

• Egg cells are larger (0.15 mm) and spherical.

Electron microscope can show more details but is not necessary for basic observation.

18. A size of the human males sperm cell is ?

A) 0.15mm B) 0.005mm C) 0.05mm D) 0.0005mm

Key: D

Solution: Human sperm is about 0.0005 mm (5 micrometers) in length. Its small size and tail (flagellum) allow it to swim through female reproductive tract to reach the egg.

19. Examples of internal fertilisations .

A) cow, dog,horse B) cat,tiger

C) lion,rabbits,deer D)all of these

Key: D

Solution: Internal fertilisation occurs in all these mammals.

• Sperm is deposited inside the female body

• Fertilisation occurs within the reproductive tract

• Ensures protection of gametes and embryo development

20. The animals undergo external fertilisation

A) pegion - cow B)sparrow-hen

C)snake-crocodile D)fish-frog

Key: D

Solution: Fish and frogs perform external fertilisation:

• Eggs and sperms are released into water

• Fertilisation occurs outside the body

• Common in aquatic animals

21. The usual components present in sperm and egg cells

A) nuclues,cytoplasm B)mitochondria for ATP production

C) cell membrane D) all of these

Key: A

Solution: Both sperm and egg cells contain:

• Nucleus – carries genetic material (DNA)

• Cytoplasm – provides cellular structure and material for metabolic activities

• In addition, sperm has mitochondria for energy to swim, but the main common components are nucleus and cytoplasm.

22. The accumalation of a watery lymph like fluids during the last part of the pregnancy is

A) cholesterol B) colostrum C) amnion fluid D) all of these

Key: C

Solution: The amniotic fluid is a watery fluid surrounding the fetus in the amniotic sac.

• It cushions and protects the baby from mechanical shocks.

• Helps in maintaining a stable temperature and allows fetal movements for proper muscular development.

23. What is the importance of colostrum for the new born babies

A) Decreasing the immune system of a child

B)supplement immune system of a child

C) developing immune system of a child

D) none of these

Key: C

Solution: Colostrum is the first milk secreted after birth.

• Rich in antibodies (immunoglobulins) and nutrients.

• Helps develop the immune system of the newborn and protects against infections.

24. The important feed for the new born baby is

A) cholesterol B)colostrum C) amnion fluid D) all of these

Key: B

Solution: Colostrum is the first milk produced by the mother after childbirth.

• It is rich in antibodies, proteins, vitamins, and minerals.

• Helps develop immunity and nourishes the newborn.

25. Pregnancy lasts on an average,nine months or 280 days. This period is called perioD)

A) systemic period B) gestation period

C)both A and B D) none of these

Key: B

Solution: Gestation period is the time from fertilisation to birth. In humans, it lasts about 280 days (9 months).

Short answer question

1. When a human female reaches at certain age then vaginal bleeding occurs for a fewdays after regular time intervals

A) What is the process known as (i). in scientific terms(ii). in every day language.

Key : Menstruation / Periods

Solution : It is the monthly shedding of the uterine lining. In everyday terms, it is called periods.

B) After how much time is the process repeated, for how many days this process usually lost.

Key: Every 28–29 days, lasts 3–5 days

Solution: The menstrual cycle repeats about once a month; bleeding lasts a few days.

C) what does the onset of this process in human female signifies

Key: Puberty / Reproductive maturity

Solution: Onset of menstruation indicates that the female has reached repro ductive age.

D) At which particular event in the life of a human female this process stops

temporarily, but starts again ?
E) At which approximate age of human female this process stops permanently.

2. When a fertilized egg E formed in the oviduct of a human female divides repeatedly to form an embryo, the embryo gets implanted in the thick and soft lining of the uterus. After this a disk-like special tissues which all the requirments of the dveloping embryo are met from mother's body. The embryo is connected to the tissue T through a string like structures,
A) What is the other name of fertilized egg cell E ?
B) What is the name of tissue T ?
C) Name the string like structure S.
D) Name two substances which pass from mother 's blood to embryo through tissue T and one type of substance which passes from embryo to mother 's blood
E) What happens to S when the baby is born, Why

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

1. Identify the incorrect statement
i. A watery lymph like fluid called colostrum is released after the birth of the baby.
ii.The fertilization occurs within female body is known as External fertilization.
iii.The umbilical cord is cut by the doctor after the child birth.
iv.Colostrum decreases immune power of chilD)
A) i&ii B)iii&iv C)ii&iv D)i&iv

Key: C

Solution:

• Statement ii is incorrect: Fertilisation inside the female body is internal, not external.

• Statement iv is incorrect: Colostrum increases immunity, it does not decrease it.

2. Identify the part which do not belong to female reproductive system.
(i) Fallopian tube (ii) Endometrium
(iii) Epidydymus (iv) Prostate glands
A) (i) & (ii) B) (ii) & (iii) C) (i) & (iv) D) (iii) & (iv)

Key: D

Solution:

• Epididymus and Prostate glands are parts of the male reproductive system, not female.

3. Which of the following makes the birth difficult
(i) The head of the foetus is turned down
(ii) The feet of the foctus is down
(iii) The rhythemic contraction of muscles of uterus
(iv) Secretion of fluid by breaking Amniotic fluid
A) (i) & (ii) B) (ii) & (iii) C) only (i) D) only ii

Key: D

Solution:

• Birth is difficult if the feet come first (breech position).
• Head-first position is normal and contractions and amniotic fluid breaking help in birth.

Assertion And Reason Type

A) Both Assertion and Reason are True, and Reason is the correct explanation for Assertion.
B) Both Assertion and Reason are True, but Reason is NOT the correct explanation for Assertion.
C) Assertion is True, but Reason is False.
D) Assertion is False, but Reason is True.

4. **Assertion :** A watery lymph like fluid is called colostrum.
   Reason : The mammary glands secretes only colostrum

Key: D

Solution:

• Assertion is true: Colostrum is the first milk after birth.
• Reason is false: Mammary glands secrete both colostrum (initially) and milk later, not only colostrum.

5. **Assertion :** The cells involving sexual reproduction is called gametes.
   Reason : These gametes are not having the involvement in formation of zygote.

Key: D

Solution:

• Assertion is true: Male and female gametes are sperm and egg cells.
• Reason is false: Gametes fuse to form a zygote, so the reason is incorrect.

6. **Assertion :** Reproduction is essential for the survival of a species on the earth.
   Reason : It ensures continuity of life on earth.

Key: A

Solution:

• Both Assertion and Reason are true, and the Reason correctly explains why reproduction is essential: it ensures continuity of species.

<u>Match the following</u>

7.

1)Internal fertilisation	( )	a) Human females
2)External fertilisation	( )	b) Human males
3)Vasectomy	( )	c) Frogs,fishes
4)Tubectomy	( )	d) snakes,crocodiles

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

Key: B

Solution:

• Internal fertilisation occurs in humans (inside female body).
• External fertilisation occurs in frogs and fishes (outside body).
• Vasectomy is a male sterilization method (done in human males).
• Tubectomy is a female sterilization method (done in human females).

8. 1)sperm ( ) a) female gamate
2) Ovum ( ) b) fertilized egg
3) Zygote ( ) c) secretion of mammary gland
4) colostrum ( ) d) male gamate
5) testosterone ( ) e) male hormone

A) 1-a, 2-b, 3-d, 4-c, 5-e B) 1-d, 2-a 3-b, 4-c, 5-e
C) 1-b, 2-a, 3-e, 4-d, 5-c D) 1-c, 2-b, 3-e, 4-a, 5-d

Key: B

Solution:

• Sperm – male gamete(d)
• Ovum – female gamete(a)
• Zygote – fertilized egg(b)
• Colostrum – secretion of mammary gland(c)
• Testosterone – male hormone(e)

Comprehensive

9. In the testic the immature male germ cells, spermatogonia produce sperms by spermatogenesis that begins at puberty. The spermatogonial cells whioch is diploid multiply by mitotic division and increase in number. Each sper matogonial stem cell develop into primary spermartocyte which undergoes meiosis and gives rise to secondary spermatocyte which undrgoes meiosis and gives rise to 4 haploid spermatids.These spermatids are transform into spermatozoa by the process called spermiogenesis.

i. Human male gametes are

A) Sperms B) Ovum C) Head D)Ovary

Key: A

Solution: Male gametes are sperm cells produced in the testes.

ii. The nature of spermatozoa is

A) Diploid B) Haploid C) Triploid D) Tetraploid

Key: B

Solution: Sperm are haploid cells (contain 23 chromosomes) to fuse with the haploid egg during fertilization.

iii. The number of chromosomes in spermatogonial stem cells

A) 40 chromosomes B) 23 chromosomes
C) 46 chromosomes D) 50 chromosomes

Key: C

Solution: Spermatogonial stem cells are diploid with 46 chromosomes (human somatic number).

iv. The type of cell division included in the formation of sperms are

A) Conjugation B)Binary fission C) Mitosis D) Meiosis

Key: C & D

Solution:

• Mitosis – spermatogonia multiply and increase in number.
• Meiosis – primary spermatocytes divide to form secondary spermatocytes and eventually spermatids (haploid).

SINGLE CORRECT ANSWER MCQ'S

1. Sertoli cells are found in testis. These cells are

A) Nurse cell B) Reproductive cell
C) Receptor cell D) None of these

Key: A

Solution: Sertoli cells are nurse cells in the testes that nourish and support developing sperm.

2. The functional maturation of sperms takes place in

A) Oviduct B) Epididymis C) Vagina D) All of these

Key: B

Solution: Sperm mature and gain motility in the epididymis.

3. The sertoli cells occur in

A) Human testis B) Frog testis C) Human ovary D) Frog ovary

Key: A

Solution: Sertoli cells are present in the human testis, not in ovary or frog testis.

4. Which one of the following is primary sex organ ?

A) Scrotum B) Penis C) Testis D) Prostrate

Key: C

Solution: The testis is the primary male sex organ producing sperm and testosterone.

5. If somatic chromosomes number is 40, what shall be the chromosomal number in
the cell of seminiferous tubules ?

A) 40 B) 20 C) 10 D) 40 and 20

Key: D

Solution: Seminiferous tubules contain both diploid (40) in spermatogonia and haploid (20) in sperm cells.

6. Expanded proximal part of oviduct in females is

A) Uterus B) Fallopian tube
C) Fimbriated funnel D) Vestibule

Key: C

Solution: The fimbriated funnel collects the ovum released from the ovary.

7. Testis descent into scrotum in mammals for

A) Spermatogenesis B) Fertilization
C) Development of sex organs D) Development of visceral organs

Key: A

Solution: Testes descend to maintain a lower temperature needed for proper spermatogenesis.