RAVI MATHS TUITION & TEST PAPERS , WHATSAPP 8056206308

12TH CBSE BIOLOGY ASSERTION REASON CS TEST CHP 1 2 3

12th Standard

Biology

28 x 1 = 28

1) (d) Perisperm is unused nucellus in the seed. It is often non functional for seed. Pericarp is the covering of fruit that develops from ovary wall. It is protective covering and also helps in dispersal and nutrition.

2) (a) The sporogenous cells of anther may directly function as microspore mother cells (also called pollen mother cells or PMCs) or they may undergo a few mitosis to add up to their number before entering meiosis. Each PMC, by a meiotic division, gives rise to a group of four haploid microspores. The aggregates of four microspores are referred to as microspore tetrads.

3) (c) The pollen wall comprises two principal layers, the inner one is called intine and the outer exine. The intine is pecto-cellulosic in nature as is the primary wall of the somatic cells. The exine is composed chiefly of a class of material called sporopollenin.

4) (c) One hypodermal nucellar cell of the micropylar region differentiates into sporogenous cell. It forms a diploid megaspore mother cell or megasporocyte. The megaspore mother cells undergo meiosis and forms a row of four haploid megaspores. Only the chalazal megaspore remains functional while the other three degenerate. The functional megaspore enlarges and gives rise to female gametophyte, also called embryo sac.

5) (c) In plants such as hemp and willow where the flowers are unisexual cross pollination becomes obligatory. However, in plants with bisexual flowers legitimate self-pollination is prevented through the various adaptations, such as self- sterility, dichogamy, herkogamy and heterostyly. All those plants in which pollen from a flower is incapable of bringing about fertilization in the same flower are said to be self sterile or self-incompatible.

6) (b) The Ubisch bodies are produced only by the glandular tapetum. Ubisch bodies get covered with sporopollenin and thus increase thickening of exine. The Ubisch bodies are involved in the external thickening of the exine, whose pattern is laid down by the spore cytoplasm in the tetrad stage.

7) (c) If A is true, but R is false

8) (c) If A is true, but R is false

9) (a) : Scrotum is a place where testes begins to descend during the third month with a concomitant shortening of gubernaculum. Proper descend of testes is essential for complete fertility because sperms needs low temperature by about 2°C from normal body temperature (37°C) to mature. The scrotal sacs has dartos muscles which constantly contracts and relaxes the loose scrotal skin. The loose scrotal skin helps to keep the testicular temperature at 35°C. If the testes do not descend from the abdominal cavity to the scrotum, the high temperature will destroy the sperm producing seminiferous tubules which results in sterility. So, scrotum acts as a thermoregulator and helps in spermatogenesis.

10) (a) : Clitoris of female is the small, spongy and erectile structure which hangs freely from the front end of vulva. It represents the underdeveloped penis. Whereas penis is a finger-like cylindrical outgrowth of abdomen projecting in between the scrotal sacs. Clitoris and penis both originate from the same origin, therefore are homologous.
Homologous organs are those organs which have the same origin and mayor may not have the same function. Clitoris and penis both are the reproductive organs present in female and male respectively. They are originated from the mesoderm layer and both are supplied with the nerves and blood vessels.

11) (b) : Epididymis lies along the top and side of testes and is divided into 3 parts - anterior caput epididymis: middle corpus epididymis and posterior cauda epididymis.
The epididymis, besides forming a part of tubular conducting system for sperm transport, in it serves as a storage reservoir for sperms

12) (b) Both assertion and reason are true but reason is not the correct explanation of assertion.

13) (d): The female secondary sexual characters are developed by estrogen. Estrogens are steroid hormones secreted by growing ovarian follicles. This hormone is responsible for the development of female secondary sexual and accessory characters. In humans, it is also formed in the adrenal cortex, testis and fetoplacental unit.
Gonadotrophic hormones (LH and FSH) are secreted by the anterior lobe of pituitary gland. LH is responsible for ovulation and transforms Graafian follicle into corpus luteum and FSH stimulates spermatogenesis, maturation of Graafian follicle and secretion of estrogen in ovaries.

14) (b): The process of development, differentiation and metamorphosis of spermatozoa is known as spermatogenesis. Spermatogenesis takes place within the seminiferous tubules under the influence of pituitary gonadotrophins (FSH and LH) and a male hormone, testosterone secreted by the interstitial cells of Leydig which represent the endocrine tissue of the testis.

15) (d): Each seminiferous tubule is lined on its inside by two types of cells called male germ cells (spermatogonia) and Sertoli cells. The regions outside the seminiferous tubules called interstitial spaces, contain Leydig's cells. Leydig's cells synthesise and secrete testicular hormones called androgens.

16) (b) If both A and R are true, but R is not the correct explanation of the A

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18) (c): Diaphragms, cervical caps and vaults are made of rubber, inserted into the female reproductive tract to cover the cervix before coitus. They prevent fertilisation by blocking the entry of sperms through the cervix. These barriers are reusable.

19) **(d) :** Rhythm method is a natural method of birth control in which the couples avoid or abstain from coitus (intercourse) from the day 10 to 17 of the menstrual cycle as ovulation occurs during this period. It is also known as periodic abstinence.

20) **(c) :** STDs are a major threat to healthy society. Incidence of STDs is very high in persons who have 15-24 years of age.

21) (c) : Oral pills contain either progestin (progesterone) alone or a combination of progestogen and estrogen.

22) (b) Both assertion and reason are true but reason is not the correct explanation of assertion.

23) (c): Periodic abstinence is a natural method of birth contrpl in which the couples avoid or abstain from coitus (copulation or intercourse) from day 10 to 17 of the menstrual cycle because ovulation can occur during this period. The chances of fertilisation are very high during this period, therefore, it is called the fertile period.

24) (d) If A is false, but R is true

25) (c) If A is true, but R is false

26) (c) If A is true, but R is false.

27) (d) If A is false, but R is true

28) (a) If both A and R are true and R is the correct explanation of the A

13 x 4 = 52

29) (a) Megasporangium
(b) (i) G. Funicle
(ii) B. Nucellus
(iii) E. Outer integument
(iv) A. Chalaza
(v) C. Embryo sac.

30) (a) Megaspore
(b) Haploid
(c) (i) Filiform apparatus refers to the special cellular thickenings in the synergids, towards micropylar tip.
(ii) They play an important role in guiding the pollen tube to enter one of the synergids.

31) **(i) (d):** Pollen grains can only germinate if the pollen grain and style tissues are compatible, i.e., of the same or closely related species. Pollen grains X and Y must have come from a compatible species.
(ii) (b)
(iii) (c) : Entomophily is the type of pollination that takes place through the agency of insects.

The insectloving flower possesses various adaptations by which they attract insects and use them as carrier of pollen grains for the purpose of cross pollination.

(iv) (b) : Insect-pollinated flowers produce nectar, which attract the pollinators for feeding. Some flowers produce edible pollen grains. Flowers are fragrant and emit scent and odour. These are brightly coloured. The pollen grains are spiny, heavy and surrounded by a yellow sticky substance called pollenkitt.

(v) (b) : Insect-pollinated flowers produce nectar, which attract the pollinators for feeding. Some flowers produce edible pollen grains. Flowers are fragrant and emit scent and odour. These are brightly coloured. The pollen grains are spiny, heavy and surrounded by a yellow sticky substance called pollenkitt.

32) (i) 75 million
(b) 300 million
c) (i) 92 chromatids
(ii) 46 chromatids

33) (a) It is a blastocyst.
(b) 'a' is inner cell mass.
'b' is trophoblast.
(c) Stem cells are present in the inner cell mass.
(d) Role of Trophoblast.
(i) It becomes attached to the endometrium for implantation.
(ii) The chorionic villi appearing on it form the foetal part of placenta.

34) **(i) (c) :** FSH stimulates the growth of Graafian follicles, development of egg oocyte within the follicles to complete the meiosis I to form secondary oocyte. It also stimulates the formation of estrogen.

(ii) (d) : LH induces rupture of mature Graafian follicle and thereby the release of secondary oocyte.

(iii) (c) : FSH stimulates the growth of Graafian follicles, development of egg oocyte within the follicles to complete the meiosis I to form secondary oocyte. It also stimulates the formation of estrogen.

(iv) (a)

(v) (d) : The rising level of progesterone inhibits the release of GnRH, which in turn inhibits production of FSH, LH and progesterone.

35) (i) The sperm A' would reach the ovum earlier.
(ii)D-Corona radíata, E-Zonapellucída. During fertilisation, a sperm comes in contact with zona pellucida layer of the ovurn and induces changes in the membrane that block the entry of additional sperms.
(iii) The secretions of the acrosome help the sperm enter into the cytoplasm of the ovum through the zona pellucida and the plasma membrane. This induces the completion of the meiotic division of the secondary oocyte.
(iv) These events takes place in the Fallopian tube of uterus.

36) (a) Implants.
(b) (i) It contains progestogens or a combination of estrogens and progestogens.
(ii) It is placed under the skin (implant).
(c) It functions as a contraceptive by
(i) inhibiting ovulation and implantation.
(ii) altering the quality of cervical mucus to prevent or retard the entry of sperms.

37) (a) Vasectomy.
(b) The surgical intervention blocks the transport of gametes and thereby prevent fertilisation and conception.
(c) In this method, a small part of the vas deferens is either removed or tied up through a small incision on the scrotum.

38) **(i) (c) :** A rapid decline in death rate, maternal mortality rate, infant mortality rate and an increase in number of of people in reproducible age are reasons for population explosion.

(ii) (a) : Logistic growth shows S-shaped or sigmoid growth curve.

(iii) (b) :

(iv) (c) :
(v) (d) : Emigration is the number of individuals of the population who left the habitat.

39) **(i) (c) :** Sahil is suffering from gonorrhoea, a sexually transmitted disease caused by an bacterium Neisseria gonorrhoeae.
(ii) (b) : Trichomoniasis, chancroid and genital warts are STDs caused by protozoa, bacteria and virusrespectively.
(iii) (c) : Gonorrhoea can be cured through use of appropriate antibiotics like penicillin and ampicillin.
(iv) (a)
(v) (d) : Treponema pallidum, Neisseria gonorrhoeae and Haemophilus ducreyi are bacterial organisms which cause syphilis, gonorrhoea and chancroid respectively. Trichomonas vaginalis is an protozoan which causes trichomoniasis.

40) **(i) (b)**
(ii) (a)
(iii) (c) : Amniocentesis is a fetal disorder test based on the chromosomal pattern in the amniotic fluid surrounding the developing embryo. It detects genetic disorders like Down syndrome, sickle cell anaemia
and cystic fibrosis.
(iv) (a)
(v) (d) : Non invasive techniques are available to determine the fetal condition. These techniques do not pose any risk to fetus. Ultrasound imaging is a non-invasive technique.

41) **(i) (c) :** Artificial Insemination (AI) is done in infertility cases either due to inability of male partner to copulate the female or due to very low sperm count in the semen of male partner.
(ii) (b) : Oligospermia is very low sperm count.
(iii) (d): ICSI is intra cytoplasmic sperm injection.
(iv) (a)
(v) (a)