THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 1 REPRODUCTION IN ORGANISMS TEACHER- SHB

Q1. A few statements describing certain features of reproduction are given below :

i) Gametic fusion takes place
ii) Transfer of genetic material takes place
iii) Reduction division takes place
iv) Progeny have some resemblance with parents

Select the options that are true for both asexual and sexual reproduction from the options given below :

a) i and ii b) ii and iii c) ii and iv d) i and iii

Q2. The term 'clone' cannot be applied to offsprings formed by sexual reproduction because :

a) Offsprings do not possess exact copies of parental DNA.
b) DNA of only one parent is copied and passed on to the offspring.
c) Offsprings are formed at different times.
d) DNA of parent and offsprings are completely different.

Q3. Amoeba and yeast reproduce asexually by fission and budding respectively, because they are :

a) unicellular organisms b) uninucleate organisms c)microscopic organisms d) heterotrophic organisms

Q4. A multicelluar, filamentous alga exhibits a type of sexual life cycle in which the meiotic division occurs after the formation of zygote. The adult filament of this alga has:

a) Haploid vegetative cells and diploid gametangia
b) Diploid vegetative cells and diploid gametangia
c) Diploid vegetative cells and haploid gametangia
d) Haploid vegetative cells and haploid gametangia

Q5. The male gametes of rice plant have 12 chromosomes in their nucleus. The chromosome number in the female gamete, zygote and the cells of the seedling will be, respectively.

a) 12,24,12 b) 24,12,12 c) 12,24,24 d) 24,12,24

Q6. Given below are a few statements related to external fertilization. Choose the correct statements.

i) The male and female gametes are formed and released simultaneously.
ii) Only a few gametes are released into the medium.
iii) Water is the medium in a majority of organisms exhibiting external fertilization.
iv) Offspring formed as a result of external fertilization have better chance of survival than those formed inside an organism.

a) iii and iv b) i and iii c) ii and iv d) i and iv

Q7. Which of the following situations correctly describe the similarity between an angiosperm egg and human egg?

i) Eggs of both are formed only once in a lifetime.
ii) Both the angiosperm egg and human egg are stationary.
iii) Both the angiosperm egg and human egg are motile transported.
iv) Syngamy in both results in the formation of a zygote.

Choose the correct answer from the options given below :

a) ii and iv b) iv only c) iii and iv d) i and iv

Q8. Which of the following statements, support the view that elaborate sexual reproductive process appeared much later in the organic evolution?

i) Lower groups of organisms have simpler body design.
ii) Asexual reproduction is common in lower groups.
iii) Asexual reproduction is common in higher groups of organisms.
iv) The high incidence of sexual reproduction occurs in angiosperms and vertebrates.

Choose the correct answer from the options given below :

a) i and iii b) i and ii c) ii and iv d) ii and iii

Q9. Offspring formed by sexual reproduction exhibit more variation than those formed by asexual reproduction because:

a) Sexual reproduction is a lengthy process
b) Gametes of parents have quantitatively different genetic composition
c) Genetic material comes from parents of two different species
d) Greater amount of DNA is involved in sexual reproduction.

Q10. Choose the correct statement from amongst the following :

a) Dioecious (hermaphrodite) organisms are seen only in animals.
b) Dioecious organisms are seen only in plants
c) Dioecious organisms are seen in both plants and animals.
d) Dioecious organism are seen only in vertebrates

Q11. There is no natural death in single celled organisms like Amoeba and bacteria because :
a) They cannot reproduce sexually.
b) They reproduce by binary fission
c) Parental body is distributed among the offspring
d) They are microscopic

Q12. There are various types of reproduction. The type of reproduction adopted by an organism depends on :
a) morphology of the organism
b) the habitat and morphology of the organism
c) morphology and physiology of the organism
d) the organism's habitat, physiology and genetic make-up

Q13. Which of the following is a post-fertilization event in flowering plants?
a) Formation of flower b) Embryo development c) Transfer of pollen grains d) Formation of pollen grains

Q14. Asexual reproduction results in :
a) rapid increase in number b) little genetic variability c) production of clones d) all of these

Q15. One of the most fundamental characteristics of life is :
a) growth b) movement c) reproduction d) fragmentation

Q16. Which one of the following is concerned with asexual reproduction?
a) Spores b) Gonads c) Zygotes d) Gametes

Q17. *Hydra* reproduces by budding. This is an example of :
a) regeneration b) parthenocarpy c) asexual reproduction d) sexual reproduction

Q18. *Bryophyllum* is a classical example of vegetative propagation by :
a) roots b) leaves c) flower buds d) stem cutting

Q19. Which one of the following is correctly matched?
a) Onion - Bulb
b) Ginger - Sucker
c) Yeast - Zoospores
d) Chlamydomonas-Conidia

Q20. In ginger, vegetative propagation occurs through :
a) Offsets b) Bulbils c) Rhizome d) Runners

Q21. Find out the wrongly matched pair :
a) Tubers - Potato
b) Rhizome- Ginger
c) Bulbils - *Agave*
d) Leafbuds- Banana
e) Offset- Water hyacinth

Q22. A species in which the individual possesses both male and female reproductive systems is termed:
a) diploid b) dioecious c) hermaphroditic d) parthenogenetic

Q23. Isogametes are :
a) sterile b) functionally similar c) morphologically similar d) none of these

Q24. Development of egg without fertilization is called:
a) oogenesis b) metagenesis c) gametogenesis d) parthenogenesis

Q25. In a monoecious plant:
a) all stamens are fused to form one unit
b) male and female sex organs are on the same individuals
c) male and female sex organs are on the different individuals
d) male and female gametes are of morphologically distinct types

Q26. Consider the following statements with respect to reproduction in the lower living organisms.
A. Organisms like yeast and Planaria reproduce asexually by means of budding.
B. True regeneration is observed in Hydra
C. The protonema of mosses multiply by fragmentation
D. In the unicellular organisms like bacteria, algae and Amoeba, reproduction is synonymous with growth, i.e. increase in number of cells.

Of the above statements :

a) A and B alone are correct
b) B and C alone are correct
c) A and D alone are correct
d) B and D alone are correct
e) C and D along are correct

Q27. Which of the following organisms breeds only once in lifetime?

a) Birds b) Bamboo c) Oysters d) Mammals

Q28. Which one of the following statements is not correct?

a) In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem
b) Water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes
c) Offsprings produced by the asexual reproduction are called clone.
d) Microscopic, motile asexual reproductive structures are called zoospores.

Q29. Appearance of vegetative propagules from the nodes of plants such as sugarcane and ginger is mainly because:

a) Nodes have meristematic cells.
b) Nodes are located near the soil.
c) Nodes are shorter than internodes.
d) Nodes have non- photosynthetic cells.

Q30. Which one of the following statements is true for date palm?

a) It is monoecious producing both staminate and pistillate flowers in the same plant.
b) It is monoecious producing staminate flowers in one plant and pistillate flowers in another.
c) It is dioecious producing staminate flowers in one plant and pistillate flowers in another
d) None of the above

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER-2 SEXUAL REPRODUCTION IN FLOWERING PLANTS TEACHER- SHB

Q1. In a pollen grain, larger nucleus is :
a) generative nucleus b) tube nucleus c) vegetative nucleus d) none of these

Q2. A close relation between flower and pollinating agent is best exhibited by :
a) *Cocos* b) *Salvia* c) *Yucca* d) *Avena*

Q3. In angiosperms, endosperm is formed by :
a) free nuclear divisions of megaspore
b) division of fused polar nuclei
c) division of fused polar nuclei and male gamete
d) division of fused synergids and male gamete

Q4. Commonly in a mature fertilized ovule n, 2n and 3n condition is respectively found in :
a) antipodals, synergids and integuments
b) egg, nucellus and endosperm
c) egg, antipodals and nucellus
d) endosperm, nucellus and egg

Q5. From among the situations given below, choose the one that prevents both autogamy and geiotonogamy
a) monoecious plant bearing unisexual flowers
b) dioecious plant bearing only male or female flowers
c) monoecious plant with bisexual flowers
d) dioecious plant with bisexual flowers

Q6. While planning for an artificial hybridization programme involving dioecious plants, which of the following steps would not be relevant:
a) bagging of female Flower
b) dusting of pollen on stigma
c) emasculation
d) collection of pollen

Q7. The phenomenon where in the ovary develops into a fruit without fertilization is called :
a) parthenocarpy b) apomixis c) asexual reproduction d) sexual reproduction

Q8. Some flowers possess pleasant odour and attractive colours for :
a) entomophily b) hydrophily c) anemophily d) all of these

Q9. Pollen grains are able to tolerate extremes of temperature and desiccation because their exine consists of :
a) cutin b) suberin c) sporopollenin d) callose

Q10. Pollen tube usually enters the embryo sac:
a) through one of the synergids
b) directly penetrating the egg
c) between one synergid and central cell
d) by knocking of antipodal cells

Q11. Double fertilization is the process in plants that includes:
a) syngamy and triple fusion b) only triple fusion c) development of antipodal cells d) none of these

Q12. The scutellum observed in the grain of wheat or maize is comparable to which part of the seed in other monocotyledons: :
a) plumule b) cotyledon c) endosperm d) aleurone layer

Q13. At the time of shedding, the number of nuclei present in an angiosperm pollen grain is :
a) One b) One or two c) Two or three d) Only two

Q14. Nucellar polyembryony is reported in species of :
a) *Gossypium* b) *Triticum* c) *Brassica* d) *Citrus*

Q15. Advantage of cleistogamy is :
a) higher genetic variability b) more vigorous offspring c) no dependence on pollinators d) vivipary

Q16. Geitonogamy involves :
a) fertilization of a flower by the pollen from a flower of another plant belonging to a distant population
b) fertilization of a flower by the pollen from another flower of the same plant.
c) fertilization of a flower by the pollen from the same flower.
d) Fertilization of a flower by the pollen from a flower of another plant in the same population

Q17. Transfer of pollen grains from the anther to the stigma of another flower of the genetically different plant is known as :

a) autogamy b) xenogamy c) cleistogamy d) geitonogamy

Q18. Function of filiform apparatus is to :

a) recognize the suitable pollen at stigma
b) stimulate division of generative cell
c) guide the entry of pollen tube
d) produce nectar

Q19. Which of the following features is/are common to both wind and water pollinated flowers?

i) Pollen grains are long and ribbon like.
ii) Stigma is large and feathery
iii) The flowers are not colourful
iv) The flowers do not produce nectar

a) iii and iv only b) ii and iii only c) i and ii only d) ii only e) i only

Q20. Select the plants pollinated by water :

i) *Water hyacinth*
ii) *Zostera*
iii) *Amorphophallus*
iv) *Vallisneria*
v) *Yucca*

a) ii and v only b) ii and iv only c) ii , iii and iv only d) i, ii, and iv only e) i, iv and v only

Q21. Residual, persistent nucellus present in some seeds is known as:

a) scutellum b) perisperm c) tapetum d) coleoptile

Q22. Which part of the plant contains sporogenous tissue?

a) pollen b) stamen c) microspores d) young anther

Q23. The nucleus of megaspore divides mitotically to form two nuclei which move to opposite poles and thus form an embryo sac which is :

a) 8-nucleate b) 6-nucleate c) 4- nucleate d) 2- nucleate

Q24. Developing pollen is nourished by :

a) tapetum b) epidermis c) middle layer d) endothecium

Q25. Which of the following are the important floral rewards to the animal pollinators?

a) Colour and large size of flower
b) Nectar and pollen grains
c) Floral fragrance and calcium crystals
d) Protein pellicle and stigmatic exudates

Q26. The hilum is a scar on the :

a) seed, where funicle was attached
b) fruit, where it was attached to pedicel
c) fruit, where style was present
d) seed, where micropyle was present

Q27. In angiosperms, microsporogenesis and megasporogenesis :

a) occur in anther
b) involve meiosis
c) occur in ovule
d) form gametes without further divisions

Q28. Which of the following statements is not correct?

a) Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style.
b) Insects that consume pollen or nectar without bringing about pollination are called pollen/ nectar robbers.
c) Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil.
d) Some reptiles have also been reported as pollinators in some plant species.

Q29. The coconut water from tender coconut represents :

a) endocarp b) fleshy mesocarp c) free nuclear proembryo d) free nuclear endosperm

Q30. The ovule of an angiosperm is technically equivalent to :

a) megaspore mother cell b) megaspore c) megasporangium d) megasporophyll

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 3 HUMAN REPRODUCTION TEACHER- SHB

Q1. Choose the incorrect statement from the following :
a) In birds and mammals internal fertilization takes place.
b) Colostrum contains antibodies and nutrients.
c) Polyspermy is prevented by the chemical changes in the egg surface
d) In the human female implantation occurs almost seven days after fertilization.

Q2. Identify the wrong statement from the following :
a) High level of estrogen triggers the ovulatory surge.
b) Oogonial cells start to proliferate and give rise to functional ova in regular cycles from puberty onwards.
c) Sperms released from seminiferous tubules are poorly motile/ non-motile.
d) Progesterone level is high during the post ovulatory phase of menstrual cycle.

Q3. Spot the odd one out from the following structures with reference to the male reproductive system:
a) Isthmus b) Rete testis c) Epididymis d) Vasa efferentia

Q4. Seminal plasma, the fluid part of semen, is contributed by :
i) Seminal vesicle ii) Prostate iii) Urethra iv) Bulbourethral gland
a) i & ii b) i & iv c) i,ii & iv d) ii, iii & iv

Q5. Spermiation is the process of the release of sperms from :
a) Epididymis b) Vas deferens c) Prostate gland d) Seminiferous tubules

Q6. Mature Graafian follicle is generally present in the ovary of a healthy human female around :
a) 5-8 day of menstrual cycle
b) 11-17 day of menstrual cycle
c) 18-23 day of menstrual cycle
d) 24-28 day of menstrual cycle

Q7. Acrosomal reaction of the sperm occurs due to :
a) Its contact with zona pellucida of the ova
b) Reactions within the uterine environment of the female
c) Reactions within the epididymal environment of the male.
d) Androgens produced in the uterus

Q8. The immature male germ cell undergo division to produce sperms by the process of spermatogenesis. Choose the correct one with reference to above.
a) Spermatogonia have 46 chromosomes and always undergo meiotic cell division.
b) primary spermatocytes divide by mitotic cell division.
c) Secondary spematocytes have 23 chromosomes and undergo second meiotic division.
d) Spermatozoa are transformed into spermatids.

Q9. Which among the following has 23 chromosomes?
a) Zygote b) Oogonia c) Spermatogonia d) Secondary oocyte

Q10. Which of the following hormones is not secreted by human placenta?
a) LH b) hCG c) Estrogens d) Progesterone

Q11. Urethral meatus refres to the :
a) Urinogenital duct
b) Opening of vas deferens into urethra
c) External opening of the urinogenital duct
d) Muscles surrounding the urinogenial duct

Q12. Morula is a developmental stage:
a) after the implantation
b) between the zygote and blastocyst
c) between the blastocyst and gastrula
d) between implantation and parturition

Q13. An important function of progesterone is :
a) prepare uterus for pregnancy
b) implantation of embryo
c) maintenance of pregnancy
d) stimulate ADH

Q14. In males testes are contained in the scrotal sacs because :

a) it facilitates ejaculation.
b) testes in the abdomen will hamper maturation of sperms.
c) other organs do not make space for the tests in the abdominal cavity
d) it provides temperature that is slightly lower than the body temperature required for formation of functional sperms
e) testes in the abdomen will accelerate maturation of sperms.

Q15. Uterine endometrium, uterine glands and connective tissue are broken during menstrual phase. That is due to :

a) lack of estrogen b) lack of progesterone c) over secretion of FSH d) over production of progesterone

Q16. Menstrual cycle is controlled by :

i) Estrogen and progesterone of ovary ii) FSH of pituitary iii) RSH and LH of pituitary iv) Oxytocin hormone

a) i and iii are correct
b) ii and iv are correct
c) i and iii are correct
d) i , ii and iii are correct

Q17. The second maturation division of the mammalian ovum occurs:

a) Until after the ovum has been penetrated by a sperm
b) Until the nucleus of the sperm has fused with that of the ovum
c) In the Graafian follicle following the first maturation division
d) Shortly after ovulation before the ovum makes entry into the Fallopian tube

Q18. Secretions from which one of the following are rich in fructose, calcium and some enzymes?

a) Liver b) Pancreas c) Salivary glands d) Male accessory glands

Q19. The acrosome of sperm contains :

a) DNA b) Fructose c) Hydrolytic enzymes d) Mitochondria

Q20. In human female the blastocyst :

a) forms placenta even before implantation
b) gets implanted into uterus three days after ovulation
c) gets nutrition from uterine endometrial secretion only after implantation
d) gets implanted in endometrium by trophoblast cells

Q21. The first movements of the foetus and appearance of hair on its head are usually observed during which month of pregnancy?

a) Fourth month b) fifth month c) Sixth month d) Third month

Q22. The signals for parturition originate from :

a) placenta only
b) fully developed foetus only
c) placenta as well as fully developed foetus
d) oxytocin released from maternal pituitary

Q23. If for some reasons, the vasa efferentia in the human reproductive system gets blocked, the gametes will not be transported from :

a) ovary to uterus
b) vagina to uterus
c) testes to epididymis
d) epididymis to vas deferens

Q24. hCG, hPL and relaxin are produced in women :

a) before puberty
b) during menstruation
c) at the time of puberty
d) only during pregnancy
e) at the time of menopause

Q25. Choose the correct order for the path of sperm from the testes to outside the body:

a) ductus deference- epididymis- ejaculatory duct-penis
b) epididymis-vas deferens- ejaculatory duct-penis
c) ejaculatory duct-ductus deferens- epididymis- penis
d) penis- ejaculatory duct-epididymis- ductus deferens

Q26. The shared terminal duct of the reproductive and urinary system in the human male is :

a) Ureter b) Urethra c) Vas deferens d) Vasa efferentia

Q27. The release of sperms from the seminiferous tubules is called:

a) spermiogenesis b) spermiation c) spermatogenesis d) fertilization e) gametogenesis

Q28. Which one of the following hormones is responsible for uterine contraction during parturition?

a) relaxin b) vasopressin c) oxytocin d) prolactin

Q29. Fertilization in humans is practically feasible only if :

a) the ovum and sperms are transported simultaneously to ampullary-isthmic junction of the cervix.
b) the sperms are transported into cervix within 48 hrs of release of ovum in uterus
c) the sperms are transported into vagina just after the release of ovum in fallopian tube.
d) the ovum and sperms are transported simultaneously to ampullary-isthmic junction of the fallopian tube

Q30. Match column I with column II and select the correct option using the codes given below:

	Column I	**Column II**
a)	Mons Pubis	Embryo formation
b)	Antrum	Sperm
c)	Trophectoderm	Female external genitalia
d)	Nebenkern	Graafian follicle

Codes :

	A	B	C	D
a)	iii	i	iv	ii
b)	i	iv	iii	ii
c)	iii	iv	ii	i
d)	iii	iv	i	ii

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 4 REPRODUCTIVE HEALTH TEACHER- SHB

Q1. The method of directly injecting a sperm into ovum in assisted reproductive technology is called:
a) GIFT b) ZIFT c) ICSI d) ET

Q2. Increased IMR and decreased MMR in a population will :
a) Result in decline in growth rate
b) Result in an explosive population
c) Cause rapid increase in growth rate
d) Not cause significant change in growth rate

Q3. Emergency contraceptives are effective if used within :
a) 72 hrs. of coitus b) 72 hrs of ovulation c) 72 hrs of menstruation d) 72 hrs of implantation

Q4. Choose the right one among the statements given below :
a) IUDs suppress gametogenesis
b) IUDs once inserted need not be replaced
c) IUDs are generally inserted by the user herself
d) IUDs increase phagocytosis reaction in the uterus.

Q5. Following statements are given regarding MTP. Choose the correct options given below :
i) MTPs are generally advised during first trimester
ii) MTPs are used as a contraceptive method
iii) MTPs are always surgical
iv) MTPs require the assistance of qualified medical personnel
a) ii and iii b) ii and iv c) i and iv d) i and ii

Q6. From the sexually transmitted diseases mentioned below, identify the one which does not specifically affect the sex organs :
a) AIDS b) Syphilis c) Gonorrhoea d) Genital warts

Q7. Condoms are one of the most popular contraceptives because of the following reasons :
a) These are effective barriers for insemination
b) These help in reducing the risk of STDs
c) They do not interfere with coital act
d) All of the above

Q8. Diaphragms are contraceptive devices used by the females. Choose the correct option from the statements given below :
i) They are introduced into the uterus
ii) They are placed to cover the cervical region
iii) They act as physical barriers for sperm entry
iv) They act as spermicidal agents
a) i and ii b) i and iii c) ii and iii d) iii and iv

Q9. If a woman wants to become pregnant, what is the optimal day on which to have sexual intercourse?
a) One week before ovulation
b) the day before menstruation is due to begin
c) the day of ovulation, which is approximately mid-cycle
d) it doesn't matter, because fertilization can occur at any time in the menstrual cycle

Q10. Birth control pills contain synthetic estrogen and progesterone. How do these hormones prevent pregnancy?
a) They trigger premature ovulation, before an egg is mature.
b) They cause the lining of the uterus to be sloughed off
c) They cause the corpus luteum to degenerate
d) They inhibit the pituitary from secreting FSH and LH, preventing ovulation.

Q11. A vasectomy is an effective technique for birth control in males because it :
a) serves the route used by the sperm to exit the male's body
b) causes the prostate gland to enlarge and seal off the ejaculatory duct
c) prevents the sperm from moving from the epididymis to the vas deferens
d) reduces the alkaline secretions in the semen, and the sperms are then destroyed in the female reproductive tract.

Q12. Select the statement which is not correct about reproductive health?
a) It refers to the healthy reproductive organs with normal functions

b) It is an insignificant part of general health and a central feature of human development
c) It is a state of complete physical, mental and social well-being
d) It deals with the reproductive processes, functions and system at all stages of life.

Q13. Prenatal defects in the foetus can be detected by :
a) MRI b) Laparoscopy c) Amniocentesis d) Genetic engineering

Q14. In India, "Family- planning programme' was started in :
a) 1947 b) 1950 c) 1951 d) 1955

Q15. ……is a major factor for infertility in women :
a) Age b) Weight c) An ovulation d) All of these

Q16. Cu ions released from copper-releasing Intra Uterine Devices (IUDs) :
a) make uterus unsuitable for implantation
b) increase phagocytosis of sperms
c) suppress sperm motility
d) prevent ovulation

Q17. 'Saheli' is :
a) a diaphragm for females
b) a diaphragm used by males
c) an oral contraceptive for females
d) a surgical method of sterilization in males
e) a surgical sterilization method for females

Q18. 'Saheli' a new oral contraceptive for females was developed by the scientists at which institute?
a) I.I. Sc- Banglore
b) C.S.I.R – New Delhi
c) C.D.R.I- Lucknow
d) I.C.M.R- New Delhi

Q19. The technique called gamete intrafallopian transfer (GIFT) is recommended for those females:
a) who cannot produce an ovum
b) who cannot retain the foetus inside uterus
c) who cannot provide suitable environment for fertilization
d) whose cervical canal is too narrow to allow passage for the sperms

Q20. The non medicated IUD is :
a) LNG- 20 b) Copper T c) Lippes loop d) Progestasert

Q21. Oral contraceptive pill is composed of :
a) estrogen and testosterone
b) estrogen and progesterone
c) estrogen and growth hormone
d) progesterone and testosterone

Q22. The test tube baby programme employs which one of the following techniques?
a) Intra uterine insemination (IUI)
b) Gamete intra fallopian transfer (GIFT)
c) Zygote intra fallopian transfer (ZIFT)
d) Intra cytoplasmic sperm injection (ICSI)

Q23. One of the legal methods of birth control is :
a) by having coitus at the time of day break
b) by a premature ejaculation during coitus
c) abortion by taking an appropriate medicine
d) by abstaining from coitus from day 10 to 17 of the menstrual cycle.

Q24. Artificial insemination means :
a) transfer of sperms of husband to a test tube containing ova
b) artificial introduction of sperms of a healthy donor into the vagina
c) introduction of sperms of a healthy donor directly into the ovary
d) transfer of sperms of a healthy donor to a test tube containing ova.

Q25. Which of the following is a hormone releasing IUD?
a) Cu7 b) CuT c) LNG- 20 d) Multiload 475

Q26. In case of a couple where a man is having very low sperm count, which of the following techniques will be suitable for fertilization?

a) Intra uterine transfer
b) Artificial insemination
c) Intra cytoplasmic sperm injection
d) Gamete intra cytoplasmic fallopian transfer

Q27. Which of the following statements is wrong?

a) Test tube baby grows inside test tube
b) Test tube baby grows within mother's womb
c) Test tube baby grows following uterine fertilization
d) Test tube baby grows within surrogate mother's womb.

Q28. Embryo with more than 16 blastomeres formed due to in vitro fertilization is transferred into:

a) Fimbriae b) Cervix c) Uterus d) Fallopian tube

Q29. Sterilisaton techniques are generally full proof methods of contraception with least side effects. Yet, this is the last option for the couples because:

i) it is almost irreversible
ii) of the misconception that it will reduce sexual urge drive
iii) it is a surgical procedure
iv) of lack of sufficient facilities in many parts of the country

Choose the correct option :

a) i and iii b) ii and iii c) i and iv d) i, ii, iii and iv

Q30. Choose the correct statement regarding the ZIFT procedure.

a) Ova collected from a female donor are transferred to the fallopian tube to facilitate zygote formation
b) Zygote is collected from a female donor and transferred to the fallopian tube
c) Zygote is collected from a female donor and transferred to the uterus.
d) Ova collected from a female donor and transferred to the uterus.

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 5 Principle of Inheritance and Variation TEACHER- SHB

Q1.Conditions of a karyotype $2n\pm1$ and $2n \pm 2$ are called:
a) polyploidy b) monosomy c)Aneuploidy d) allopolyploidy

Q2. In sickle cell anaemia, glutamic acid is replaced by valine. Which one of the following triplets codes for valine?
a) GGG b) AAG c) GAA d) GUG

Q3. ZZ/ZW type of sex determination is seen in :
a) Snails b) Peacock c) Platypus d) Cockroach

Q4. Two genes 'A' and 'B' are linked. In a dihybrid cross involving these two genes, the F1 heterozygote is crossed with homozygous recessive parental type (aabb). What would be the ratio of offspring in the next generation?
a) 3:1 b) 1:1 c) 1:1:1:1 d) 9:3:3:1

Q5. In the F_2 generation of a Mendelian dihybrid cross the number of phenotypes and genotypes are :
a) phenotypes- 9; genotypes – 4
b) phenotypes- 4; genotypes- 9
c) phenotypes- 4; genotypes- 8
d) phenotypes- 4; genotypes- 16

Q6. Mother and father of a person with 'O' blood group have 'A' and 'B' blood group respectively. What would be the genotype of both mother and father?
a) Mother is homozygous for 'A' blood group and father is heterozygous for 'B'.
b) Mother is heterozygous for 'A' blood group and father is homozygous for 'B'.
c) Both mother and father are heterozygous for 'A' and 'B' blood group, respectively.
d) Both mother and father are homozygous for 'A' and 'B' blood group, respectively.

Q7. A true breeding plant producing red flowers is crossed with a pure plant producing white flowers. Allele for red colour of flower is dominant. After selfing the plants of first filial generation, the proportion of plants producing white flowers in the progeny would be :
a) 1/3 b) 1/2 c) 3/4 d)1/4

Q8. Down's syndrome is an example of :
a) triploidy b) polyteny c) polyploidy d) aneuploidy

Q9. Inheritance of blood group is a condition of :
i) Co-dominance ii) Incomplete dominance iii) Multiple allelism d) Multiple gene
a) i and ii b) ii and iv c) i and iii d) i and d

Q10. Persons suffering from sickle- cell anaemia normally do not suffer from :
a) cholera b) hepatitis c) malaria d) high blod pressure

Q11. The offspring produced from a marriage have only O or A blood groups. Of the genotypes given below, the possible genotypes of the parents would be :
a) $I^A I^A$ and $I^A I^0$ b) $I^0 I^0$ and $I^0 I^0$ c) $I^A I^A$ and $I^0 I^0$ d) $I^A I^0$ and $I^0 I^0$

Q12. A cross in which an organism showing a dominant phenotype is crossed with the recessive parent in order to know its genotype is called:
a) backcross b) test cross c) dihybrid cross d) monohybrid cross

Q13. Which one of the following cannot be explained on the basis of Mendel's law of dominance?
a) The discrete unit controlling a particular character is called a factor
b) Out of one pair of factors one is dominant and the other recessive
c) Alleles do not show any blending and both the characters recover as such in F_1 generation.
d) Factors occur in pairs

Q14. Select the correct statement from the ones given below with respect to dihybrid cross :
a) Tightly linked genes on the same chromosome show higher recombinations
b) Genes far apart on the same chromosome, show very few recombinations
c) Genes loosely linked on the same chromosome show similar recombinations as the tightly linked ones
d) Tightly linked genes on the same chromosome show very few recombinations

Q15. ABO blood grouping is controlled by gene I which has three alleles and show co-dominance. There are six genotypes. How many phenotypes in all are possible?
a) six b) three c) four d) five

Q16.The variation/ difference in the offsprings of a species from their parents constitutes an important component of :

a) Genetics b) Heredity c) Speciation d) Species Fixation

Q17. XO type of sex determination is seen in :

a) Man b) Birds c) Horses d) Grasshopper

Q18. Who used the frequency of recombination between gene pairs on the same chromosome as a measure of the distance between genes and mapped their position on the chromosome?

a) Carl Correns b) Tschermark c) Gregor Mendel d) Watson and Crick

Q19. The behaviour of the chromosomes was parallel to the behaviour of genes during meiosis was noted by :

a) de Vries b) Henking c) Correns d) Tschermark

Q20. A normal visioned man whose father was colour blind, marries a woman whose father was also colour-blind. They have their first child as a daughter. What are the chances that this child would be colour-blind?

a) 25% b) 50% c) 100% d) zero per cent

Q21. Sickle cell anaemia is caused by the substitution of :

a) valine by glutamic acid at sixth position of α chain of haemoglobin
b) valine by glutamic acid at sixth position of β chain of haemoglobin
c) glutamic acid by valine at sixth position of α chain of haemoglobin
d) glutamic acid by valine at sixth position of βchain of haemoglobin

Q22. If father shows normal genotype and mother shows a carrier trait for haemophilia then:

a) all the female offsprings will be normal
b) all the female offsprings will be carriers
c) a male offspring has 50% chance of active disease
d) a female offspring has probability of 50% to have active disease.

Q23. The syndrome in human in which individual's somatic cells contain the three sex chromosomes XXY is called:

a) Superfemale b) Turner's syndrome c) Down's syndrome d) Klinefelter's syndrome

Q24. Which Mendelian idea is depicted by a cross in which the F1 generation resembles both the parents?

a) co-dominance b) law of dominance c) incomplete dominance d) inheritance of one gene

Q25. A human female with Turner's syndrome:

a) is able to produce children with normal husband
b) has one additional X- chromosome
c) has 45 chromosomes with XO
d) exhibits male characters

Q26. In order to lessen the suffering of phenylketonurics their diet should have :

a) no phenylalanine and no tyrosine
b) low phenylalanine and normal requirement of tyrosine
c) normal recommended amount of phenylalanine
d) normal recommended amount of both phenylalanine and tyrosine

Q27. A couple, both carriers for the gene sickle cell anaemia planning to get married, wants to know the chances of having anaemic progeny?

a) 100% b) 75% c) 50% d) 25%

Q28. A pleiotropic gene :

a) is a gene evolved during Pliocene
b) is expressed only in primitive plants
c) controls multiple traits in an individual
d) controls a trait only in combination with another gene

Q29. A true breeding plant is :

a) one that is able to breed on its own
b) near homozygous and produces offspring of its own kind.
c) always homozygous recessive in its genetic constitution
d) produced due to cross- pollination among unrelated plants.

Q30. If a colour-blind man marries a woman who is homozygous for normal colour vision, the probability of their son being colour - blind is:

a) 0 b) 1 c) 0.5 d) 0.75

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 6 MOLECULAR BASIS OF INHERITANCE TEACHER- SHB

Q1. The first genetic material could be:
a)DNA b) RNA c) Protein d) Carbohydrates

Q2. To initiate translation, the mRNA first binds to :
a) The whole ribosome
b) No such specificity exists
c) The larger ribosomal subunit
d) The smaller ribosomal subunit

Q3. In *E. coli*, the lac operon gets switched on when:
a) repressor binds to operator
b) RNA polymerase binds to the operator
c) lactose is present and it binds to the repressor
d) lactose is present and it binds to RNA polymerase

Q4. The basis of DNA fingerprinting is:
a) DNA coiling b) The double helix c) DNA replication d) Errors in base sequence e) Polymorphism in sequence

Q5. The anti-parallel nature of DNA refers to :
a) Its charged phosphate groups
b) The opposite direction of the two strands
c) The pairing of bases on one strand with bases on the other strand
d) The formation of hydrogen bonds between bases from opposite strands

Q6.Which of the following statements are correct?
i) RNA polymerase I transcribes rRNAs.
ii) RNA polymerase II transcribes snRNAs.
iii) RNA polymerase III transcribes hnRNA
iv) RNA polymerase II transcribes hnRNA
a) i and ii are correct b) i and iii are correct c) i, ii and iv are correct d) ii and iii are correct

Q7. The central dogma in molecular biology is :
a) DNA → RNA → Protein
b) RNA → DNA → Protein
c) RNA → Protein → DNA
d) DNA → Protein → RNA

Q8. Read the following statements and choose the correct option :
i) Nitrogenous base is linked to the pentose sugar through a N-glycosidic linkage.
ii) Phosphate group is linked to 5'-OH of a nucleoside through phosphoester linkage.
iii) Two nucleosides are linked through 3'-5' N- glycosidic linkage
iv) Negatively charged DNA is wrapped around positively charged histone octamer to form nucleosome
v) The chromatin that is more densely packed and stains dark is called euchromatin
a) i alone is wrong b) iv alone is wrong c) iii and v alone are wrong d) i, ii and iv alone are wrong

Q9. Select the correct statement regarding protein synthesis :
a) When the small subunit of the ribosome encounters an mRNA the process of translation begins
b) Peptidase catalyses the formation of peptide bond
c) UTRs are present between the start condon and stop codon
d) At the end of translation the release factor binds to the initiation codon

Q10. Amino acid binding site of tRNA is :
a) 5'end b) 3'end c) T ψ C loop d) DHU loop

Q11. Choose the wrong statement :
a) VNTR belong to a class of mini-satellite DNA
b) Satellite DNA normally do not code for proteins
c) HGP was coordinated by US Department of Energy and the National Institute of Health
d) DNA fingerprinting involves identifying similarities in repetitive DNA

Q12. In lac operon, the genes a,i,y and z code respectively for:
a) repressor protein, permease, β-galactosidase, transacetylase
b) transacetylase, permease, β-galactosidase, repressor protein

c) transacetylase, repressor protein, permease, β-galactosidase
d) β-galactosidase, transacetylase, repressor protein, permease

Q13. Transformation was discovered by :
a) Griffith b) Watson & Crick c) Meselson and Stahl d) Hershey and Chase

Q14. Which property among these listed below is not a criteria for a molecule to act as a genetic material?
a) Generate its replica
b) Destroy itself after every cell cycle
c) Chemically and structurally stable
d) Mutate slowly to facilitate evolution
e) Express itself in the form of Mendelian characters

Q15. The result of which of the following reactions experiments carried out by Avery *et al*. on *Streptococcus pneumoniae* has proved conclusively that DNA is the genetic material?
a) Live 'R' strain + DNA from 'S' strain + RNase
b) Live 'R' strain + DNA from 'S' strain + DNase
c) Live "R' strain+ Denatured DNA of 'S' strain + protease
d) Heat killed 'R' strain + DNA from 'S' strain + DNase

Q16. In eukaryotes, RNA polymerase II transcribes :
a) tRNA b) snRNAs c) hnRNA d) 18S rRNA e) 28S rRNA

Q17. Aminoacylation of tRNA is essential for :
a) splicing b) termination c) replication of RNA d) initiation of transcription e) formation of peptide bond

Q18. In cukaryotic genes, coding sequences are called:
a) exons b) introns c) histones d) repetitive DNA e) regulatory sequence

Q19. Find the wrongly matched pair :
a) George Gamow - Codon is triplet
b) Meselson and Stahl - regulaton of gene expression
c) Alec Jeffreys - DNA fingerprinting
d) Frederick Sanger - amino acid sequencing
e) Har Gobind Khorana - synthesized RNA molecules chemically

Q20. In DNA fingerprinting technique, ……probe is used for hybridization of DNA fragments.
a) double stranded RNA
b) single stranded radioactive RNA
c) single stranded radioactive DNA
d) double stranded non-radioactive DNA

Q21. In the double-helical structure of DNA, the pitch of the helix is :
a) 3.4nm b) 0.34nm c) 6.6nm d) 34nm e) 6.6×10^{-9}m

Q22. In the ribose of RNA, unlike DNA, every nucleotide residue has an additional :
a) Uracil in the 5' position
b) OH group in the 5' position
c) OH group in the 2' position
d) COOH group in the 2' position
e) Phosphate group in the 2' position

Q23. What is a nucleosome?
a) They are similar to endosomes
b) Negatively charged histone octamers
c) A vesicle containing positively charged histones within nucleolus
d) A structure formed by wrapping of negatively charged DNA around positively charged histone octamer
e) They are the transforming principles discovered by Griffith

Q24. Some amino acids are coded by more than one codon as the code is :
a) specific b) universal c) punctuated d) degenerate e) unambiguous

Q25. DNA replicates semi-conservatively was first shown in :
a) *E.coli* b) *Vicia faba* c) *Drosophila* d) *Caenorhabditis elegans* e) *Streptococcus pneumoniae*

Q26. Taylor conducted the experiment to prove semi conservative mode of chromosome replication on :
a) *E.coli* b) *Vinca rosea* c) *Vicia faba* d) *Drosophila melanogaster*

Q27. Satellite DNA is important because it:
a) codes for proteins needed in cell cycle

b) shows high degree of polymorphism in an individual which is heritable from parents to children
c) does not code for proteins and is same in all members of the population
d) codes for enzymes needed for DNA replication

Q28. In a DNA strand the nucleotides are linked together by :

a) peptide bonds b) hydrogen bonds c) glycosidic bonds d) phosphodiester bonds

Q29. The promoter site and the terminator site for transcription are located at :

a) 5’ (upstream) end
b) 3’ (downstream) end
c) 3’ (downstream) end and 5’ (upstream) end, respectively of the transcription unit
d) 5’ (upstream) end and 3’ (downstream) end, respectively of the transcription unit

Q30. From bacteria to men nearly universal code for phenylalanine is :

a) UUU b) CUU c) UUA d) UUG

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 7 EVOLUTION TEACHER- SHB

Q1. The bones of forelimbs of whale, bat, cheetah and man are similar in structure, because :
a) they share a common ancestor
b) they perform the same function
c) they have biochemical similarities
d) one organism has given rise to another

Q2. Analogous organs arise due to :
a) genetic drift b) artificial selection c) divergent evolution d) convergent evolution

Q3. $(p+q)^2 = p^2 + 2pq+q^2 = 1$ represents an equation used in :
a) biometrics b) population genetics c) Mendelian genetics d) molecular genetics

Q4. Fossils are generally found in :
a) Igneous rocks b) Any type of rock c) Sedimentary rocks d) Metamorphic rocks

Q5. Which type of selection is industrial melanism observed in moth, *Biston bitularia*:
a) Artificial b) Stabilising c) Directional d) Disruptive

Q6. The most accepted line of descent in human evolution is :
a) Homo erectus ⟶ Homo habilis ⟶ Homo sapiens
b) Ramapithecus ⟶ Homo habilis ⟶ Homo erectus ⟶ Homo sapiens
c) Australopithecus ⟶ Ramapithecus ⟶ Homo sapiens ⟶ Homo habilis
d) Australopithecus ⟶ Ramapithecus ⟶ Homo erectus ⟶ Homo habilis ⟶ Homo sapiens

Q7. In 1953, S.L Miller created primitive Earth conditions in the laboratory and gave experimental evidence for origin of first form of life from pre-existing non-living organic molecules. The primitive Earth conditions created include :
a) low temperature, volcanic storms, atmosphere rich in oxygen
b) low temperature, volcanic storms, reducing atmosphere
c) high temperature, volcanic storms, non-reducing atmosphere
d) high temperature, volcanic storms, reducing atmosphere containing CH_4, NH_3, etc.

Q8. Variations during mutations of meiotic recombinations are :
a) random and small
b) random and directional
c) random and directionless
d) random, small and directional

Q9. An evolutionary process, giving rise to new species adapting to new habitats and ways of life is called:
a) adaptation b) microevolution c) adaptive radiation d) convergent evolution

Q10. Sweet potato and potato are examples of :
a) homologous structures b) analogous structures c) both a and b d) none of these

Q11. Hardy-Weinberg equilibrium is known to be affected by gene flow, genetic drift, mutation, genetic recombination and :
a) saltation b) evolution c) limiting factors d) natural selection

Q12. Transfer of genes from one gene pool to another is called :
a) mutation b) gene flow c) speciation d) genetic drift

Q13. Higher frequency of melanic British moths and DDT resistance in mosquitoes are cited as examples for :
a) Genetic drift b) Point mutation c) Natural selection d) Arrival of the fittest

Q14. Closely related species varying different in trait expresses :
a) convergent evolution b) divergent evolution c) parallel evolution d) none of these

Q15. Miller-Urey's experiment mixture had the following except:
a) methane b) CO_2 c) hydrogen d) water vapour

Q16. Which of the following is a connecting link between mammals and reptiles?
a) Peripatus b) Balanoglossus c) Ornithorhyncus d) Archaeopterys

Q17.Darwin's finches provide an excellent evidence in favour of evolution. The evidences come from the field of :
a) anatomy b) embryology c) palaeontology d) biogeography

Q18. Hacckel's biogentic law is :
a) every organism is produced by the parents
b) ontogency repeats phylogency

c) phylogeny repeats ontogeny
d) reproductive isolation

Q19. Choose the wrong statement :
a) Louis Pasteur demonstrated that life comes only from pre-existing life.
b) Flippers of Penguins and Dolphins are examples of homology
c) S.L. Miller observed that electric discharge in a flask containing CH_4, H_2, NH_3 and water vapour at 800^0C formed aminoacids
d) Homology indicates common ancentory

Q20. Origin of first toothed birds and gymnosperms took place during :
a) Triassic b) Jurassic c) Permian d) Cretaceous

Q21. Darwin judged the fitness of an individual by :
a) Number of offspring
b) Ability to defend itself
c) Strategy to obtain food
d) Dominance over other individuals

Q22. The primate which existed 15 mya among these was :
a) *Homo habilis* *b) Ramapithecus* *c) Homo erectus* *d) Australopithecus* *e) Neanderthal man*

Q23. The scientific name of Java man is :
a) *Homo habilis* *b) Homo erectus erectus* *c) Australopithecus bisei* *d) Homo sapiens neanderthalensis*

Q24. Oparin and Haldane proposed:
a) the theory of Natural selection
b) that mutations caused speciation
c) that migration affects genetic equilibrium
d) that evolution of life forms had been driven by use and disuse of organs
e) that the first form of life could have come from preexisting non-living organic molecues

Q25. The extinct human ancestor, who ate only fruits and hunted with stone weapons was:
a) *Dryopithecus* *b) Homo erectus* *c) Ramapithecus* *d) Austalopithecus*

Q26. According to Darwin, diversity in Australian marsupials is an example of :
a) parallel evolution b) parallel radiation c) adaptive radiation d) convergent evolution

Q27. The brain capacity of *Homo erectus* was about:
a) 650cc b) 900cc c) 1200cc d) 1400cc e) 1600cc

Q28. Which one of the following is the most primitive ancestor of man?
a) *Homo habilis* *b) Australopithecus* *c) Homo neanderthalensis* *d) Ramapithecus punjabicus*

Q29. Which one of the following options gives one correct example each of convergent evolution and divergent evolution?

	Convergent evolution	**Divergent evolution**
a)	Eyes of Octopus and mammals	Bones of forelimbs of vertebrates
b)	Thorns of Bougainvillea and tendrils of Cucurbita	Wings of butterflies and birds
c)	Bones of forelimbs of vertebrates	Wings of butterfly and birds
d)	Thorns of Bougainvillea and tendrils of Curcurbita	Eyes of Octopus and mammals

Q30. Which one of these was a flying dinosaur?
a) Triceratops *b) Pteranodon* *c) Stegosaurus* *d) Tyrannosaurus*

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 8 HUMAN HEALTH AND DISEASE TEACHER- SHB

Q1. The disease chikunguniya is transmitted by:
a) house flies b) cockroach c) *Aedes* mosquitoes d) female *Anopheles*

Q2. Many diseases can be diagnosed by observing the symptoms in the patient. Which group of symptoms are indicative of pneumonia?
a) constipation, abdominal pain, cramps, blood clots
b) difficulty in respiration, fever, chills, cough, headache
c) nasal congestion and discharge, cough, sore throat, headache
d) high fever, weakness, stomach pain, loss of appetite and constipation

Q3. In malignant tumours, the cells proliferate, grow rapidly and move to other parts of the body to form new tumours. This state of disease is called:
a) metastasis b) mitosis c) metagenesis d) teratogenesis

Q4. When an apparently healthy person is diagnosed as unhealthy by a psychiatrist, the reason could be that :
a) he does not take interest in sports
b) the patient was not efficient at his work
c) the patient was not economically prosperous
d) the patient shows behavioural and social maladjustment

Q5. Which of the following are the reason(s) for rheumatoid arthritis? Choose the correct option:
i) body attacks self cells.
ii) lymphocytes become more active
iii) more antibodies are produced in the body
iv) the ability to differentiate pathogens or foreign molecules from self cells is lost.

a) i and ii b) i and iv c) iii and iv d) i and iii

Q6. 'Smack' is a drug obtained from the :
a) flowers of *Datura*
b) leaves of *Cannabis sativa*
c) fruits of *Erythroxylum coca*
d) latex of *Papaver somniferum*

Q7. The substance produced by a cell in viral infection that can protect other cells from further infection is :
a) interferon b) histamine c) serotonin d) colostrum

Q8. Transplantation of tissues/ organs to save certain patients often fails due to rejection of such tissues/ organs by the patient. Which type of immune response is responsible for such rejections?
a) auto-immune response
b) humoral immune response
c) physiological immune response
d) cell-mediated immune response

Q9. Antibodies present in colostrum which protect the newborn from certain diseases is of:
a) IgG type b) IgA type c) IgD type d) IgE type

Q10. Anti-venom against snake poison contains :
a) Enzymes b) Antigens c) Antibodies d) Antigen-antibody complexes

Q11. Which of the following is not a lymphoid tissue?
a) Spleen b) Tonsils c) Pancreas d) Thymus

Q12. Haemozoin is a :
a) precursor of haemoglobin
b) toxin from *Streptococcus*
c) toxin from *Plasmodium* species
d) toxin from *Haemophilus* species

Q13. One of the following is not the causal organism for ringworm:
a) *Microsporum* *b) Trichophyton* *c) Epidermophyton* *d) Macrosporum*

Q14. A person likely to develop tetanus is immunized by administering:
a) dead germs b) weakened germs c) preformed antibodies d) wide spectrum antibiotics

Q15. Use of antihistamines and steroids give a quick relief from :

a) cough b) allergy c) nausea d) headache

Q16. Consider the following four statements (1-4) regarding kidney transplant and select the two correct ones out of these.

i) Even if a kidney transplant is proper the recipient may need to take immunosuppressants for a long time
ii) The cell-mediated immune response is responsible for the graft rejection
iii) The B-lymphocytes are responsible for rejection of the graft
iv) The acceptance or rejection of kidney transplant depends on specific interferons.

The two correct statements are :

a) i and ii b) i and iii c) ii and iii d) iii and iv

Q17. Immediate hypersensitivity which results in the release of histamine and other inflammatory substances is mediated by :

a) IgE b) IgG c) IgA d) IgD

Q18. In the immune system, interferons are a part of :

a) macrophages b) cellular barriers c) physical barriers d) cytokine barriers e) physiological barriers

Q19. Which of the following is an opioid drug?

a) Cocaine b) Heroin c) Marijunana d) Hashish e) Charas

Q20. Select the correct statement from the ones given below :

a) Chewing tobacco lowers blood pressure and heart rate.
b) Barbiturates when given to criminals make them tell the truth
c) Morphine is often given to persons who have undergone surgery as a painkiller
d) Cocaine is given to patients after surgery as it stimulates recovery

Q21.At which stage of HIV infection does one usually show symptoms of AIDS?

a) When the infecting retrovirus enters host cells
b) When viral DNA is produced by reverse transcriptase
c) Within 15 days of sexual contact with an infected person.
d) When HIV replicates rapidly in helper T- lymphocytes and damages large number of these

Q22. Common cold is not cured by antibiotics because it is :

a) caused by a virus
b) not an infectious disease
c) caused by a Gram-positive bacterium
d) caused by a Gram- negative bacterium

Q23. Which one of the following acts as a physiological barrier to the entry of microorganisms in human body?

a) Skin b) Tears c) Monocytes d) Epithelium of urinogenital tract

Q24. Aggregates of lymphoid tissue present in the distal portion of the small intestine are known as :

a) Villi b) Rugae c) Choroid plexus d) Peyer's patches

Q25. The factor that contributes most to the development of cirrhosis is :

a) alcoholism b) high blood sugar c) high blood urea d) high cholesterol

Q26. Heroin is obtained by:

a) alkylation of cocaine
b) acetylation of morphine
c) hydroxylation of morphine
d) methylation of benzodiazepines

Q27. Common cold differs from pneumonia in that :

a) Pneumonia is a communicable disease whereas the common cold is a nutritional deficiency disease.
b) Pneumonia can be prevented by a live attenuated bacterial vaccine whereas the common cold has no effective vaccine
c) Pneumonia is caused by a virus while the common cold is caused by the bacterium *Haemophilus influenza.*
d) Pneumonia pathogen infects alveoli whereas the common cold affects nose and respiratory passage but not the lungs.

Q28. Sports persons are frequently accused of abusing the drug known as :

a) heroin b) cocaine c) morphine d) amphetamine

Q29. The cell-mediated immunity inside the human body is carried out by :

a) Erythrocytes b) Thrombocytes c) T-lymphocytes d) B- lymphocytes

Q30. B- lymphocytes are :

i) formed in bone marrow

ii) preprocessed in bone marrow
iii) preprocessed in liver
iv) formed in thymus

Codes :

a) i, ii and iii are correct b) i and ii are correct c) ii and iv are correct d) i and iii are correct

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 9 STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION TEACHER- SHB

Q1. Cross breeding in domesticated animals shall produce:
a) new breeds b) inferior breeds c) sterile hybrids d) both b and c

Q2. Superior animals of a breed shall be obtained through:
a) cross breeding b) close breeding c) breeding between selected animals of the same breed d) all of above

Q3. Close inbreeding reduces fertility and productivity due to :
a) contamination b) absence of hybrid vigour c) inbreeding depression d) antinutritional disorders

Q4. Bees wax is used in industries for the preparation of :
a) toothpaste b) erazor c) enamel d) cosmetics and polishes

Q5. High milk yielding varieties of cows are obtained by:
a) embryo transfer b) super ovulation c) artificial insemination d) all of these

Q6. Crossing Bikaneri ewes and Marino rams developed a new breed of sheep called:
a) Hilsa b) Catla c) Nellore d) Hisardale

Q7. A mule is a hybrid of :
a) a male donkey and female horse
b) a male stallion and female donkey
c) a male horse and a female horse
d) a male donkey and a female donkey

Q8. Freshwater fishes are :
a) Rohu, Hilsa and *Mackerel*
b) Catla, Rohu and *Hilsa*
c) Catla, Rohu and Common *Carp*
d) Hilsa, Sardines and *Pomfrets*

Q9. A breeder evolving disease resistant variety will start with :
a) working out yield of different varieties
b) go through the subject in library
c) selection of parents
d) hybridization

Q10. Improved varieties of wheat suitable for India climates have been developed by :
a) hybridization and mutation
b) mutation and cloning
c) cloning of polyploids
d) poloyploidy and hybridization

Q11. The self- pollinated progeny of a homozygous plant constitutes a:
a) pure line b) mixed population c) mass selection d) heterosis

Q12. A group of animals which are related by descent and share many similarities are referred to as :
a) breed b) race c) variety d) species

Q13. Inbreeding is carried out in animal husbandry because it :
a) increases vigour
b) improves the breed
c) increases heterozygosity
d) increases homozygosity

Q14. Use of certain chemicals and radiation to change the base sequences of genes of crop plants is termed:
a) recombinant DNA technology
b) transgenic mechanism
c) mutation breeding
d) gene therapy

Q15. Micropropagation is :
a) propagation of microbes in vitro
b) propagation of plants in vitro
c) propagation of cells in vitro
d) growing plants on smaller scale

Q16. The term 'totipotency' refers to the capacity of a :

a) cell to generate whole plant
b) bud to generate whole plant
c) seed to germinate
d) cell to enlarge in size

Q17. Thirty three per cent of India's gross domestic product (GDP) comes from :

a) industry b) agriculture c) export d) small scale cottage industries

Q18. A collection of all the alleles of all the genes of a crop plant is called:

a) germplasm collection b) protoplasm collection c) herbarium d) somaclonal collection

Q19. Branch of biology dealing with improvement of plant variety is :

a) eugenics b) plant breeding c) agrology d) serpendity

Q20. The egg layer variety of bird popular all over the world is :

a) Plymouth rock b) Hampshire c) white leghorn d) wayandott

Q21. *Spirulina* is a rich source of :

a) protein b) vitamins c) minerals d) all of these

Q22. Breeding of crops with high levels of minerals, vitamins and proteins is called:

a) biomagnification b) micropropagation c) somatic hybridization d) biofortification

Q23. 'Jaya' and 'Ratna' developed for green revolution in India are the varieties of :

a) rice b) wheat c) bajra d) maize

Q24. Mutations can be induced with :

a) IAA b) ethylene c) gamma radiation d) infra-red radiations

Q25.' Himgiri' developed by hybridization and selection for disease resistance against rust pathogens is a variety of :

a) maize b) sugarcane c) wheat d) chilli

Q26. Green revolution in India occurred during :

a) 1960's b) 1970's c) 1980's d) 1950's

Q27. To obtain virus free healthy plants from a diseased one by tissue culture technique, which part/ parts of the diseased plant will be taken ?

a) Epidermis only b) Apical meristem only c) Palisade parenchyma d) Both apical and axillary meristems

Q28. Outbreeding is an important strategy of animal husbandry because it:

a) helps in accumulation of superior genes
b) is useful in producing purelines of animals
c) is useful in overcoming inbreeding depression
d) exposes harmful recessive genes that are eliminated by selection

Q29. Interspecific hybridization is the mating of :

a) superior males and females of different breeds
b) more closely related individuals within same breed for 4-6 generations
c) animals within same breed without having common ancestors
d) two different related species

Q30. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?

a) Auxin and abscisic acid
b) Gibberellin and abscisic acid
c) IAA and gibberellins
d) Auxin and cytokinin

THE ASIAN SCHOOL, DEHRADUN

MUTIPLE CHOICE QUETSIONS

CLASS – XII CHAPTER- 10 MICROBES IN HUMAN WELFARE TEACHER- SHB

Q1. The vitamin whose content increases following the conversion of milk into curd by lactic acid bacteria is :

a) vitamin C b) vitamin D c) vitamin B_{12} d)vitamin E

Q2. Methanogenic bacteria are not found in :

a) rumen of cattle b) gobar gas plant c) activated sludge d) bottom of water logged paddy fields

Q3. The primary treatment of waste water involves the removal of :

a) stable particles b) toxic substances c) harmful bacteria d) dissolved impurities

Q4. BOD of waste water is estimated by measuring the amount of :

a) oxygen evolution
b) total organic matter
c) oxygen consumption
d) biodegradable organic matter

Q5. The technology of biogas production from cow dung was developed in India largely due to the effort of :

a) Gas Authority of India
b) Indian Oil Corporation
c) Oil and Natural Gas Commission
d) Indian Agricultural Research Institute and Khadi and Village Industries Commission

Q6. The free-living fungus *Trichoderma* can be used for :

a) killing insects
b) producing antibiotics
c) biological control of plant diseases
d) controlling butterfly caterpillars

Q7. Mycorrhiza does not help the host plant in:

a) increasing its resistance to insects
b) increasing its tolerance to drought
c) enhancing its resistance to root pathogens
d) enhancing its phosphorus uptake capacity

Q8. Which one of the following is not a nitrogen- fixing organism?

a) *Nostoc* b) *Anabaena* c) *Azotobacte*r d) *Pseudomonas*

Q9. Big holes in Swiss cheese are made by a :

a) machine
b) bacterium that produces methane gas
c) bacterium producing a large amount of carbon dioxide
d) fungus that releases a lot of gases during its metabolic activities

Q10. The residue left after methane production from cattle dung is:

a) burnt b) used as manure c) buried in land fills d) used in civil construction

Q11. Activated sludge should have the ability to settle quickly so that it can:

a) be rapidly pumped back from sedimentation tank to aeration tank
b) absorb pathogenic bacteria present in waste water while sinking to the bottom of the settling tank
c) be discarded an anaerobically digested
d) absorb colloidal organic matter

Q12. *Lactobacillus* mediated conversion of milk to curd results because of :

a) coagulation and partial digestion of milk fats
b) coagulation and partial digestion of milk proteins
c) coagulation of milk proteins and complete digestion of milk fats
d) coagulation of milk fats and complete digestion of milk proteins

Q13. Which one of the following is used in the production of citric acid?

a) Aspergillus niger
b) Rhizopus arrhizus
c) Acetobacter aceti
d) Saccharomyces cerevisiae

Q14. Baker's yeast is :

a) *S. cerevisae* b*) S. ludwingii* c) *S. octosporus* d) *Schizosaccharomyes*

Q15. Ethanol is commercially produced through a particular species of :

a) *Aspergillus* b) *Saccharomyces* c) *Clostridium* d) *Trichoderma*

Q16. Which among these are produced by distillation of fermented broth?

i) Whisky ii) Whine ii) Beer iv) Rum v) Brandy

a) ii and iii alone ii) i and ii alone iii) iii and v alone iv) i, iv and v alone v) iii and iv alone

Q17. The product of which of the following organisms has been commercialized as blood cholesterol lowering agent :

a) Saccharomyces cerevisiae

b) Trichoderma polysporum

c) Monascus purpureus

d) Aspergillus niger

Q18. Antibiotics inhibit the growth of :

a) Bacteria and fungi

b) Bacteria and viruses

c) Bacteria, fungi and viruses

d) Bacteria, algae and viruses

Q19. A biofertiliser is :

a) symbiotic association like *Azotobacter* which fixes atmospheric nitrogen

b) farm yard manure consisting of mixture of cattle dung and crop

c) green manure in which a quickly growing crop is cultivated and ploughed under

d) a cyanobacterium like *Anabaena* species living in cavities of *Azolla* leaves

Q20. Virsues of the genus *Nucleopolyhedrovirus* are employed as :

a) antibiotics

b) gobar gas producers

c) biological control agents

d) anaerobic sludge digesters

e) atmospheric nitrogen fixing agents

Q21. Ernst Chain and Howard Florey's contribution was :

a) Discovery of streptokinase

b) establishing the potential of penicillin as a effective antibiotic

c) discovery of the DNA sequencer

d) isolating the bacterial plasmid

e) production of genetically engineered insulin

Q22. Floc is……

a) a mesh-like structure formed by the association of bacteria and fungal filaments in sewage treatment.

b) the primary sludge produced in sewage treatment

c) the effluent in primary treatment tank obtained during sewage treatment

d) a type of biofortified food

Q23. 'Roquefort cheese' is ripened by using a :

a) bacterium b) fungus c) type of yeast d) cyanobacteria

Q24. The microbial biocontrol agent for butterfly caterpillar is :

a) Saccharamyces b) Lactobacillus c) Bacillus thuringiensis d) Staphylococcus

Q25. Match the following list of microbes and their importance :

A) Saccharomyces cerevisiae	(i)	Production of immune-suppressive agents
B) Monascus purpureus	(ii)	Ripening of Swiss cheese
C) Trichoderma polysporum	(iii)	Commercial production of ethanol
D) Propionibacterium shermanii	(iv)	Production of blood cholesterol lowering agents

	A	B	C	D
a)	iii	iv	i	ii
b)	iv	iii	ii	i
c)	iv	ii	i	iii
d)	iii	i	iv	ii

Q26. Which of the following is wrongly matched in the given table?

Microbe	**Product**	**Applications**
a) Streptococcus	Streptokinase	Removal of clot from blood vessel
b) Clostridium butylicum	Lipase	Removal of stains
c) Trichoderma polysporum	Cyclosporin A	Immunosuppressive drug
d) Monascus purpureus	Statins	Lowering of blood cholesterol

Q27. Which one of the following alcoholic drinks is produced without distillation :

a) Wine b) Rum c) Brandy d) Whiskey

Q28. Methanogens do not produce :

a) oxygen b) methane c) carbondioxide d) hydrogen sulphide

Q29. Match column I with column II and select the correct option using the codes given below :

Column I	Column II
A. Citric acid	*i) Trichoderma*
B. Cyclosporin A	*ii) Clostridium*
C. Statins	*iii) Aspergilus*
D. Butyric acid	*iv) Monascus*

Codes :

	A	B	C	D
a)	i	iv	ii	iii
b)	iii	iv	i	ii
c)	iii	i	ii	iv
d)	iii	i	iv	ii

Q30. What gases are produced in anaerobic sludge digesters?

a) Methane and CO_2 only
b) Hydrogen sulphide and CO_2
c) Methane, hydrogen sulphide and CO_2
d) Methane, hydrogen sulphide and O_2

THE ASIAN SCHOOL, DEHRADUN

MUTIPLE CHOICE QUETSIONS

CLASS – XII CHAPTER- 11 BIOTECHNOLOGY : PRINCIPLES & PROCESSES TEACHER- SHB

Q1. The technique used for isolation of genes is :
a) eastern blotting b) northern blotting c) southern blotting d) none of these

Q2. Restriction enzymes occur in :
a) algae b) fungi c) bacteria d) viruses

Q3. A technique used to amplify a specific DNA fragment of interest is:
a) blotting technique b) PCR c) DNA fingerprinting d) gel electrophoresis

Q4. Complete genome of which non- crop plant has already been sequenced?
a) *Datura* b) *Arabidiopsis* c) *Oenothera* d) None of these

Q5. In PCR, DNA polymerase enzyme commonly used is :
a) DNA polymerase I b) DNA polymerase II c) *Taq* polymerase d) DNA polymerase III

Q6. The nuclease enzyme which begins its attack from free end of a polynucleotide is :
a) Exonuclease b) Kinase c) Polymerase d) Endonuclease

Q7. It is now possible to breed plants and animals with desired characters through :
a) genetic engineering b) ikebena technique c) chromosome engineering d) tissue culture

Q8. Ti plasmid transfer works with:
a) monocots only b) dicots only c) all plants d) None of these

Q9. Plasmid's replication is :
a) autonomous b) depends on the genomic DNA c) needs on initiator d) does not replicate

Q10. The sticky ends of a fragmented DNA molecule are made up of :
a) calcium salts b) endonuclease c) unpaired bases d) methyl groups

Q11. Which of the given statement is correct in the context of observing DNA separated by agarose get electrophoresis ?
a) DNA can be seen in visible light
b) DNA can be seen without staining in visible light
c) ethidium bromide stained DNA can be seen in visible light
d) ethidium bromide stained DNA can be seen under exposure to UV light

Q12. In agarose gel electrophoresis, DNA molecules are separated on the basis of their :
a) charge only b) size only c) charge to size ratio d) all of these

Q13. An antibiotic resistance gene in a vector usually helps in the selection of :
a) competent cells b) transformed cells c) recombinant cells d) none of these

Q14. The role of DNA ligase in the construction of a recombinant DNA molecule is :
a) formation of phosphodiester bond between two DNA fragments
b) formation of hydrogen bonds between sticky ends of DNA fragments
c) ligation of all purine and pyrimidine bases
d) none of the above

Q15. Significance of "heat shock" method in bacterial transformation is to facilitate :
a) binding of DNA to the cell wall
b) uptake of DNA through membrane transport proteins
c) uptake of DNA through transient pores in the bacterial cell wall
d) expression of antibiotic resistance gene

Q16. Which of the following steps are catalysed by *Taq* polymerase in a PCR reaction?
a) denaturation of template DNA
b) annealing of primers to template DNA
c) extension of primer end on the template DNA
d) all of the above

Q17. The linking of antibiotic resistance gene with the plasmid vector became possible with :
a) DNA ligase b) Endonucleases c) DNA polymerase d) Exonucleases

Q18. Agarose extracted from sea weeds finds use in :
a) tissue culture b) PCR c) Gel electrophoresis d) spectrophotometery

Q19. In genetic engineering, the antibiotics are used:
a) as selectable markers
b) to select healthy vectors

c) as sequences from where replication starts
d) to keep the cultures free of infection

Q20. Biolistics (gene- gun) is suitable for :
a) disarming pathogen vectors
b) transformation of plant cells
c) constructing recombinant DNA by joining with vectors
d) DNA fingerprinting

Q21. Restriction enzymes *Eco* RI cuts the DNA between bases G and A only when the sequence in DNA is :
a) GATATC b) GAATTC c) GATTCC d) GAACTT

Q22. Amplification of gene of interest by using DNA polymerase may go up to :
a) 0.1 million times b) 1.0 million times c) 1.0 billion times d) 1.0 trillion times

Q23. The colonies of recombinant bacteria appear white in constrast to blue colonies of non-recombinant bacteria because of :
a) non-recombinant bacteria containing beta- galactosidase
b) insertional inactivation of alpha-galactosidase in non-recombinant bacteria
c) insertional inactivation of alpha-galactosidase in recombinant bacteria
d) inactivation of glycosidase enzyme in recombinant bacteria

Q24. The DNA molecule to which the gene of interest is integrated for cloning is called:
a) Vector b) Carrier c) Template d) Transformer

Q25. The introduction of t-DNA into plants involves:
a) Infection of the plant by *Agrobacterium tumefaciens*
b) Altering the pH of the soil, then heat- shocking the plants
c) Exposing the plants to cold for a brief period
d) Allowing the plant roots to stand in water

Q26. Which of the following is a restriction endonuclease?
a) Hind II b) Protease c) DNase I d) RNase

Q27. The *taq* polymerase enzyme is obtained from:
a) Thermus aquaticus
b) Thiobacillus ferroxidans
c) Bacillus subtilis
d) *Pseudomonas putida*

Q28. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using :
a) Ligase b) *Eco* RI c) PolymeraseIII d) *Taq* polymerase

Q29. Stirred- tank bioreactors have been designed for :
a) purification of product
b) addition of preservatives to the product
c) availability of oxygen throughout the process
d) ensuring anaerobic conditions in the culture vessel

Q30. Which of the following is not a component of downstream processing?
a) Expression b) Separation c) Purification d) Preservation

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 12 BIOTECHNOLOGY AND ITS APPLICATIONS TEACHER- SHB

Q1. Important objective of biotechnology in agriculture is :
a) to produce pest resistant varieties of plants
b) to increase the nitrogen content
c) to decrease the seed number
d) to increase the plant weight

Q2. C- peptide of human insulin is :
a) a part of mature insulin molecule
b) responsible for formation of disulphide bridges
c) removed during maturation of pro-insulin to insulin
d) responsible for its biological activity.

Q3. The site of production of ADA in the body is :
a) bone marrow b) lymphocytes c) blood plasma d) monocytes

Q4. A protoxin is :
a) a primitive toxin b) a denatured toxin c) toxin produced by protozoa d) inactive toxin

Q5. In RNAi, genes are silenced using :
a) ssDNA b) dsDNA c) dsRNA d) ssRNA

Q6. The first step in production of insulin using *E. coli* is :
a) isolation of mRNA transcribing for insulin from pancreas cell
b) isolation of nucleotides transcribing for insulin from pancreas cell
c) isolation of gene producing insulin from human DNA
d) attachment of gene producing insulin from human DNA to plasmid using ligase.

Q7. Insect resistance transgenic cotton has been produced by inserting a piece of DNA from :
a) an insect b) a bacterium c) a wild relative of cotton d) a virus

Q8. Which bacteria is used as biopesticide first on commercial scale in the world?
a) *Bacillus thuringiensis* b) *E. coli* c) *Pseudomonas aeruginosa* d) *Agrobacterium tumefaciens*

Q9. The genetic defect adenosine deaminase (ADA) deficiency may be cured permanently by :
a) introducing bone marrow cells producing ADA into cells at early embryonic stages
b) enzyme replacement therapy
c) periodic infusion of genetically engineered lymphocytes having functional ADA c-DNA
d) administering adenosine deaminase activators

Q10. More than 95% of transgenic animals are :
a) mice b) fish c) cows d) rabbits

Q11. Transgenic animals are generally produced for all of the following needs except :
a) testing of vaccine safety
b) testing of chemical safety
c) stimulation of pathogenicity
d) production of pharmacologically important protein

Q12. What is the advantage in clinical use of humulin (human insulin produced through rDNA technique) over the use of conventional ox or pig insulin?
a) It does not cause immunological problems
b) It is produced by *E. coli* in our intestine
c) It is cheaper for the patient
d) There is no advantage

Q13. One of the advantages of developing transgenic mice is that it is very useful :
a) in producing new varieties of mice
b) in developing a show piece example
c) to study vaccine safety
d) in gene targeting

Q14. The biological product created by the introduction of portions of DNA which codes for α-1 antitrypsin, is used to treat:
a) asthma b) bronchitis c) emphysema d) cystic fibrosis

Q15. In *Bt* cotton, the *Bt* toxin present in plant tissue as pro-toxin is converted into active toxin due to :

a) alkaline pH of the insect gut
b) acidic pH of the insect gut
c) action of gut micro-organisms
d) presence of conversion factors in insect gut

Q16. The two polypeptides of human insulin are linked together by :
a) hydrogen bonds b) phosphodiester bond c) covalent bond d)disulphide bridges

Q17.Which kind of therapy was given in 1990 to a four year old girl with adenosine deaminase (ADA) deficiency?
a) Immunotherapy b) Radiation therapy c) Gene therapy d) Chemotherapy

Q18. Which body of the Government of India regulates GM research and safety of introducing GM organisms for public services?
a) Bio safety committee
b) Indian Council of Agricultural Research
c) Genetic Engineering Approval Committee
d) Research Committee on Genetic Manipulation

Q19. Transgenic plants are the ones :
a) generated by introducing foreign DNA into a cell and regenerating a plant from the cell
b) produced after protoplast fusion in artificial medium
c) grows in artificial medium after hybridization in the field
d) produced by a somatic embryo in artificial medium

Q20. *Bt* cotton is not :
a) a GM plant b) Insect resistant c) a bacterial gene expressing system d) resistant to all pesticides

Q21. Silencing of a gene could be achieved through the use of :
a) short interfering RNA b) antisense RNA c) by both a and b d) none of the above

Q22. Monoclonal antibodies are :
a) single parent type and attack many antigens
b) single parent type and attack specific antigen
c) various parent type and attack single antigen
d) various parent type and attack many antigens

Q23. Main objective of production / use of herbicide resistant GM crops is to :
a) encourage eco-friendly herbicide
b) reduce herbicide accumulation in food articles for health safety
c) eliminate weeds from the field without the use of manual labour
d) eliminate weeds from the field without the use of herbicides

Q24. The first human hormone produced by recombinant DNA technology is :
a) progesterone b) insulin c) estrogen d) thyroxin

Q25. The first clinical gene therapy was done for the treatment of :
a) AIDS
b) Cancer
c) Cystic Fibrosis
d) SCID (Severe Combined Immunodeficiency Resulting from the deficiency of ADA)

Q26. The transgenic animals have been created to model human diseases. One of the example is :
a) humanized mice for AIDS research having human CD_4 gene
b) ducomouse
c) models for immune function to cure diabetes or auto immune diseases
d) all of the above

Q27. Which of the following *Bt* crops is being grown in India by the farmers ?
a) maize b) cotton c) brinjal d) soyabean

Q28. Which one of the following techniques made it possible to genetically engineered living organisms?
a) heavier isotope labelling
b) hybridization
c) recombinant DNA techniques
d) X-ray diffraction

Q29. Which one of the following is commonly used in transfer of foreign DNA into crop plants ?
a) *Meloidogyne incognitia*
b) *Agrobacterium tumefaciens*
c) *Penicillium expansum*

d) *Trichoderma harzianum*

Q30. Which of the following is not a product of genetic engineering?

a) insulin b) *Bt* corn c) hybrid maize d) *Bt* potato

THE ASIAN SCHOOL, DEHRADUN

MUTIPLE CHOICE QUETSIONS

CLASS – XII CHAPTER- 13 ORGANISMS AND POPULATIONS TEACHER- SHB

Q1. Succulents occur in :

a) deserts b) tundra c) temperate deciduous forests d) tropical rain forests

Q2. Type of plants having adaptations to check transpiration is :

a) xerophytes b) lithophytes c) halophytes d) epiphytes

Q3. Animals that can tolerate a narrow range of salinity are :

a) stenohaline b) euryhaline c) anadromous d) catadromous

Q4. Benthoic animals are :

a) live deep in sea b) floating c) submerged d) active swimmers

Q5. Which mammal excretes solid urine to avoid water loss?

a) Crow b) Kangaroo rat c) Camel d) Squirrel

Q6. Ecological niche is :

a) the surface area of the ocean
b) an ecologically adapted zone
c) the physical position and functional role of a species within the community
d) formed of all plants and animals living at the bottom of a lake

Q7. According to Allen's rule, the mammals from colder climates have :

a) shorter ears and longer limbs
b) longer ears and shorter limbs
c) longer ears and longer limbs
d) shortest ears and shorter limbs

Q8. If a population of 50 *Paramecium* present in a pool increases to 150 after an hour, what would be the growth rate of population?

a) 50 per hour b) 200 per hour c) 5 per hour d) 100 per hour

Q9. A population has more young individuals compared to the older individuals. What would be the status of population after some years?

a) It will decline b) It will stabilize c) It will increase d) It will first decline and then stabilise

Q10. What parameters are used for tiger census in our country's national parks and sanctuaries?

a) Pug marks only b) Pug marks and faecal pellets c) Faecal pellets only d) Actual head count

Q11. In which of the following associations, one of the species gets benefit and the other is unaffected?

a) Commensalism b) Mutualism c) Symbiosis d) Parasitism

Q12. Nutrient enrichment of water body is :

a) eutrophication b) stratification c) biomagnification d) none of these

Q13. Water holding capacity is maximum in case of :

a) clay b) sand c) silt d) gravel

Q14. Maximum growth rate occurs in :

a) senescent phase b) lag phase c) exponential phase d) stationary phase

Q15. Small fish get struck near the bottom of a shark and derives its nutrition from it. This type of association is called as:

a) symbiosis b) commensalism c) predation d) parasitism

Q16. An orchid resembling the female of an insect so as to be able to get pollinated is due to phenomenon of :

a) mimicry b) pseudocopulation c) pseudopollination d) pseudoparthenocarpy

Q17. A high density of elephant populatin in an area can result in :

a) intra- specific competition
b) inter-specific competition
c) predation on one another
d) mutualism

Q18. A large regional unit characterized by a major vegetation type and associated fauna is a specific climate zone constitutes :

a) ecosystem b) biological community c) biome d) habitat

Q19. If in a population, natality is balanced by mortality then there will be :

a) decrease in population growth
b) zero population growth
c) increase in population growth

d) over population

Q20. Consider the following four conditions (1-4) and select the correct pair of them as adaption to environment in Desert lizards. The conditions are:

i) Burrowing in soil to escape high temperature
ii) Losing heat rapidly from the during high temperature
iii) Bask in sun when temperature is low.
iv) Insulating body due to thick fatty dermis

Options:

a) i and iii b) ii and iv c) i and ii d) iii and iv

Q21. Eutrophication is often seen in :

a) Freshwater lakes b) ocean c) mountains d) deserts

Q22. A biologist studied the population of rats in a barn. He found that the average natality was 250, average mortality 240, immigration 20 and emigration 30. The net increase in population is:

a) 10 b) 15 c) 5 d) 0

Q23. Which one of the following processes during decomposition is correctly described?

a) Fragmentation- carried out by organisms such as earthworm
b) Humification- leads to the accumulation of a dark coloured substance humus which undergoes microbial action at a very fast rate
c) Catabolism- last step in the decomposition under fully anaerobic condition
d) Leaching – water soluble inorganic nutrients rise to the top layers of soil

Q24. The zone of atmosphere in which the ozone layer is present called:

a) troposphere b) ionosphere c) mesosphere d) stratosphere

Q25. Animals have the innate ability to escape from predation. Examples for the same are given below. Select the incorrect example.

a) colour change in Chameleon
b) enlargement of body size by swallowing air in puffer fish
c) poison fangs in snakes
d) melanism in moths

Q26. Vertical distribution of different species occupying different levels in a biotic community is known as :

a) divergence b) stratification c) zonation d) pyramid

Q27. In which of the following interactions both partners are adversely affected?

a) Competition b) Predation c) Parasitism d) Mutualism

Q28. Gause'e principle of compeititve exclusion states that :

a) more abundant species will exclude the less abundant species through competition
b) competition for the same resources excludes species having different food preferences
c) no two species can occupy the same niche indefinitely for the same limiting resources
d) larger organisms exclude smaller ones through competition

Q29. If '+' sing is assigned to beneficial interaction '-' sign to detrimental and '0' sign to neutral interaction, then the population represented by '+' '-' refers to :

a) commensalism b) parasitism c) mutualism d) amensalism

Q30. Read the statements regarding a stable community and choose the correct option :

i) must be resistant to occasional disturbances
ii) should show much variation in productivity from year to year
iii) must be resistant to invasions by alien species

a) i and ii are correct b) i , ii and iii are correct c) i only is correct d) ii and iii are correct e) i and iii are correct

THE ASIAN SCHOOL, DEHRADUN

MUTIPLE CHOICE QUETSIONS

CLASS – XII CHAPTER- 14 ECOSYSTEM TEACHER- SHB

Q1. During the process of ecological succession the changes that take place in communities are :

a) orderly and sequential b) random c) very quick d) not influenced by the physical environment

Q2. Energy stored at the consumer level is :

a) gross primary productivity b) net primary productivity c) net productivity d) secondary productivity

Q3. The biomass of each succeeding trophic level is :

a) more than the one preceding
b) less than the one preceding
c) constantly fixed
d) equal to next trophic level

Q4. Mr. X is eating curd/ yoghurt. For this he is occupying trophic level :

a) first b) second c) third d) fourth

Q5. Which one is not used for construction of ecological pyraminds?

a) fresh weight b) dry weight c) number of individuals d) rate of energy flow

Q6. In a climax community :

a) size of individual is small
b) food chain and food web is complex
c) efficiency of energy use is low
d) ecological niches are few generalised compared to adjoining communities

Q7. Bacteria and fungi release extracellular enzymes on detritus to carry out :

a) fragmentation b) leaching c) catabolism d) humification

Q8. A rocky barren land after some time changes into fertile rich, crop yielding land. Which sequence might have occurred?

a) lichens, mosses, shrubs, herbs
b) lichens, mosses, herbs, shrubs
c) mosses, herbs, shrubs, lichens
d) herbs, shrubs, lichens, mosses

Q9. A progressive series of changes in plant and animal life of an area from initial colonization is known as :

a) evolution b) succession c) specialization d) selection

Q10. Which one of the following types of organisms occupy more than one trophic level in a pond ecosystem?

a) frog b) phytoplankton c) fish d) zooplankton

Q11. The biomass available for consumption by the herbivores and the decomposers is called:

a) gross primary productivity
b) net primary productivity
c) secondary productivity
d) standing crop

Q12. Study the four statements (a-d) given below and select the two correct ones out of them:

(1) a lion eating a deer and a sparrow feeding on grain are ecologically similar in being consumers
(2) predator starfish *Pisaster* helps in maintaining species diversity of some invertebrates
(3) predators ultimately lead to extinction of prey species
(4) production of chemicals such as nicotine and strychnine by the plants are metabolic disorders

The two correct statements are :

a) 1 and 4 b) 1 and 2 c) 2 and 3 d) 3 and 4

Q13. Which one of the following statements about pyramid of energy is incorrect whereas remaining three are correct?

a) it shows energy content of different trophic level organisms
b) it is inverted in shape
c) it is upright in shape
d) the base is broad

Q14. The rate of formation of new organic matter by rabbit in a grassland, is called:

a) Net productivity
b) Secondary productivity
c) Net primary productivity
d) Gross primary productivity

Q15. Natural reservoir of phosphorus is :

a) seawater b) animal bones c) rock d) fossils

Q16. Secondary productivity is the rate of formation of new organic matter by :

a) producer b) parasite c) consumer d) decomposer

Q17. If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain?

Plant → Mice → Snake → Peacock

a) 0.0002 J b) 0.02J c) 0.002J d) 0.2J

Q18. Match the following and select the correct option :

(1) earthworm (i) pioneer species
(2) succession (ii) detrivore
(3) ecosystem service (iii) natality
(4) population growth (iv) pollination

	(1)	(2)	(3)	(4)
a)	ii	i	iv	iii
b)	i	ii	iii	iv
c)	iv	i	iii	ii
d)	iii	ii	iv	i

Q19. Secondary/ Succession takes place on/in :

a) Bare rock b) Degraded forest c) Newly created pond d) Newly cooled lava

Q20. The mass of living material at a trophic level at a particular time is called:

a) Gross primary productivity
b) Net primary productivity
c) Standing state
d) Standing crop

Q21. Select the correct statement :

a) Phosphorus cycle is an example of gaseous nutrient cycle
b) The pyramid of biomass in sea is generally inverted.
c) A given organism may not occupy more than one trophic level simultaneously.
d) Pyramid of energy is always inverted, can never be upright.

Q22. Identify the correct type of food chain :

dead animal → blow fly maggots → common frog → snake

a) grazing food chain b) detritus food chain c) decomposer food chain d) predator food chain

Q23. Pick out the correct option from (a) to (e)

A. Primary succession begins in areas where natural communities have been destroyed
B. Hydrarch succession takes place in water
C. The climax community is the community that is the near equilibrium with the immediate environment.
D. In newly cooled lava secondary succession occurs.

a) A and B are correct, C and D are incorrect
b) B and C are correct, A and D are incorrect
c) A and D are correct, B and C are incorrect
d) B only is correct, A ,C and D are incorrect
e) A only is correct, B,C and D are incorrect

Q24. In which of the following both pairs have correct combination?

(a)	Gaseous nutrient cycle Sedimentary nutrient cycle	Carbon and Nitrogen Sulphur and Phosphorus
(b)	Gaseous nutrient cycle Sedimentary nutrient cycle	Carbon and Sulphur Nitrogen and Phosphorus
(c)	Gaseous nutrient cycle Sedimentary nutrient cycle	Nitrogen and Sulphur Carbon and Phosphorus
(d)	Gaseous nutrient cycle Sedimentary nutrient cycle	Sulphur and Phosphorus Carbon and Nitrogen

Q25. During ecological succession:

a) the gradual and predictable change in species composition occurs in a given area
b) the establishment of a new biotic community is very fast in its primary phase

c) the numbers and types of animals remain constant
d) the changes lead to a community that is in near equilibrium with the environment and is called pioneer community

Q26. Which of the following would appear as the pioneer organisms on bare rocks?

a) Lichens b) Liverworts c) Mosses d) Green algae

Q27. About 70% of total global carbon is found in :

a) oceans b) forests c) grasslands d) agroecosystem

Q28. In a tree ecosystem, the pyramid of numbers is :

a) upright b) inverted c) spindle like d) variable

Q29. Lichen is the pioneer vegetation in which type of succession?

a) hydrosere b) lithosere c) psammosere d) xerosere

Q30. In a polluted environment, the maximum pollutant will occur in :

a) primary producers b) tertiary consumers c) secondary consumers d) primary consumers

THE ASIAN SCHOOL, DEHRADUN

MUTIPLE CHOICE QUETSIONS

CLASS – XII CHAPTER- 15 BIODIVERSTIY & CONSERVATION TEACHER- SHB

Q1. Decrease in species diversity in tropical countries is mainly due to :

a) urbanization b) pollution c) deforestation d) soil erosion

Q2. Which one of the following is not an invasive alien species in the Indian context?

a) Lantana b) Cynodon c) Parthenium d) Eichhornia

Q3. The extinction of passenger pigeon was due to :

a) increased number of predatory birds
b) over-exploitation by humans
c) non- availability of food
d) bird flu virus infection

Q4.Which of the following forests is known as the 'lungs of the planet'?

a) Taiga forest b) Tundra forest c) Amazon rain forest d) Rain forests of North East India

Q5. Number of plant species estimated to be present in India is :

a) 40,000 b) 45,000 c) 58,000 d) 80,000

Q6. Hot spots of biodiversity are areas with :

a) little biodiversity
b) maximum biodiversity
c) maximum conservation
d) both a and c

Q7. Which one is a hot spot of biodiversity?

a) Aravallie hills b) Western ghats c) Indogangetic plain d) Eastern Ghats

Q8. Which one of the following shows maximum genetic diversity in India?

a) Rice b) Maize c) Mango d) Ground nut

Q9. Select the correct statement about biodiversity:

a) The desert areas of Rajasthan and Gujarat have a very high level of desert animal species as well as numerous rare animals.
b) Large scale planting of *Bt* cotton has no adverse effect on biodiversity
c) Western Ghats have a very high degree of species richness and endemism
d) Conservation of biodiversity is just a fad pursued by the developed countries.

Q10. Sacred groves are specially useful in :

a) Generating environmental awareness
b) Preventing soil erosion
c) Year- round flow of water in rivers
d) Conserving rare and threatened species

Q11. India has only 2.4% of the world's land area but its share of the global species diversity is :

a) 1.8% b) 3.1% c) 5.1% d) 8.1%

Q12. Total number of identified biodiversity hot spots in the world is :

a) 25 b) 24 c) 40 d) 34

Q13. Which one of the following is not used for ex situ plant conservation?

a) Field gene banks b) Seed banks c) Shifting cultivation d)Botanical gardens

Q14. The organization which publishes the Red list of species is :

a) WWF b) ICFRE c) IUCN d) UNEP

Q15. Which one of the following is an in situ method of biodiversity conservation?

a) National park b) Botanical garden c) Zoological garden d) Scientific laboratory

Q16. Which of the following is the most important cause of animals and plants being driven to extinction?

a) Over exploitation
b) Alien species invasion
c) Habitat loss and fragmentation
d) Co-extinctions

Q17. Red list contains data or information on:

a) threatened species
b) marine vertebrates only
c) all economically important plants

d) Plants whose products are in international trade.

Q18. The species confined to a particular region and not found elsewhere is termed as:

a) Keystone b) Alien c) Endemic d) Rare

Q19. Match column I with column II and select the correct answer:

Column I	Column II
A. Quagga	1. Africa
B. Thylacine	2.Russia
C. Dodo	3. Australia
D. Stellar's sea cow	4. Mauritius

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

Q20. Number of known species of organisms on this Earth is :

a) 5.0 million b) 3.2 million c) 1.7 million d) 1.32 million

Q21. Which of the below mentioned regions exhibit less seasonal variations ?

a) Tropics b) Temperates c) Alpines d) Both a and b

Q22. Which one of the following represents maximum number of species among global biodiversity?

a) Algae b) Lichens c) Fungi d) Mosses & Ferns

Q23. Find the wrongly matched pair :

a) Endemism - Species confined to a region and not found anywhere else
b) Hotspots - Western Ghats
c) Sacred groves - Jaintia Hills of Rajasthan
d) Ex- situ conservation - Zoological Parks
e) Alien Species to India - Water hyacinth

Q24. Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as :

a) in situ conservation of biodiversity
b) in situ conservation by sacred groves
c) in situ cryo- conservation of biodiversity
d) advanced ex situ conservation of biodiversity

Q25. How many hotspots of biodiversity have been identified till date by Norman Myers?

a) 34 b) 43 c) 17 d) 25

Q26. Extinction of a species in a food chain is compensated by :

a) food chain b) ecological pyramid c) food web d) None of these

Q27. India became a part to convention on 'Biological Diversity' in the year:

a) 1994 b) 1993 c) 1992 d) 1998

Q28. Wildlife Protection Act India was implemented in the year :

a) 1982 b) 1988 c) 1972 d) 1970

Q29. Amongst the animal groups given below, which one has the highest percentage of endangered species?

a) Insects b) Mammals c)Amphibians d) Reptiles

Q30. Gene bank is collection of :

a) Frozen germplam b) Spores c) Seeds d) All of these

THE ASIAN SCHOOL, DEHRADUN
MUTIPLE CHOICE QUETSIONS
CLASS – XII CHAPTER- 16 ENVIRONMENTAL ISSUES TEACHER- SHB

Q1. Which one of the following dissolves more rapidly in blood haemoglobin than oxygen?
a) ozone b) nitrous oxide c) sulphur dioxide d) carbon monoxide

Q2. Greehouse gases include:
a) CO_2, CFC, CH_4 and NO_2
b) CO_2, O_2, N_2, NO_2 and NH_3
c) CH_4, N_2, CO_2 and NH_3
d) CFC, CO_2, NH_3 and N_2

Q3. Catalytic converters are fitted into automobiles to reduce emission of harmful gases. Catalytic converters change unburnt hydrocarbons into:
a) carbon dioxide and water
b) carbon monoxide
c) methane
d) carbon dioxide and methane

Q4. Why is it necessary to remove sulphur from petroleum products?
a) to reduce the emission of sulphur dioxide in exhaust fumes
b) to increase efficiency of automobile engines
c) to use sulphur removed from petroleum for commercial purposes
d) To increase the life span of engine silencers

Q5. Which one of the following impurities is easiest to remove from waste water?
a) bacteria b) colloids c) dissolved solids d) suspended solids

Q6. Nuisance growth of aquatic plants and bloom forming algae in natural waters is generally due to high concentration of
a) carbon b) sulphur c) calcium d) phosphorus

Q7. Algal blooms impart a distinct colour to water due to :
a) their pigments
b) excretion of coloured substances
c) formation of coloured chemicals in water facilitated by physiological degradation of algae
d) absorption of light by algal cell wall

Q8. Eutrophication is found in:
a) agricultural land near thermal plant
b) saline soil
c) lake
d) mountain

Q9. Montreal Protocol which calls for appropriate action to protect the ozone layer from human activities was passed in the year :
a) 1985 b) 1986 c) 1987 d) 1988

Q10. The Montreal Protocol refers to :
a) persistent organic pollutants
b) global warming and climatic change
c) substances that deplete the ozone layer
d) biosafety of genetically modified organisms

Q11. According to Central Pollution Control Board, which particulate size in diameter of the air pollutant is responsible for greatest harm to human health?
a) 1.0 or less b) 5.2-2.5 c) 2.5 or less d) 1.5 or less

Q12. Which one of the following is the correct percentage of the two greenhouse gases that contribute to the total global warming?
a) N_2O6%, CO_2 86%
b) methane 20% , N_2O18%
c) CFCs 14%, methane 20%
d) CO_2 40%, CFCs 30%

Q13A lake which is rich in organic waste may result in:
a) increased population of fish due to lots of nutrients

b) mortality of fish due to lack of oxygen
c) increased population of aquatic organisms due to minerals
d) drying of the lake due to algal bloom

Q14. The Air (Prevention and Control of Pollution) Act was amended in 1987 to include one of the following as pollutant :
a) water b) noise c) dust d) none of these

Q15. dB is a standard abbreviation used for the quantitative expression of :
a) a certain pesticide
b) the density of a bacteria in a medium
c) a particular pollutant
d) the dominant *Bacillus* in a culture

Q16. Organisms called methanogens are most abundant in a :
a) cattle yard b) pollutant stream c) hot spring d) sulphur rock

Q17. Match the items given in column I with those in column II and select the correct option given below :

	Column I	Column II
A	Eutrophication	i) UV-B radiation
B	Sanitary Landfills	ii) Deforestation
C	Snow blindness	iii) Nutrient enrichment
D	Jhum cultivation	iv) Waste disposal

a) A – iii, B- iv, C- i, D- ii
b) A-i, B-iii, C-iv, D-ii
c) A –ii, B-i, C-iii, D-iv
d) A- i , B-ii, C-iv, D-iii

Q18. In an area where DDT had been used extensively, the population of birds declined significantly because :
a) birds stopped laying eggs
b) earthworms in the area got eradicated
c) cobras were feeding exclusively on birds
d) many of the birds laid, did not hatch

Q19. Measuring Biochemical Oxygen Demand (BOD) is a method used for :
a) estimating the amount of organic matter in sewage water .
b) working out the efficiency of oil driven automobile engines
c) measuring the activity of *Saccharomyces cerevisae* in producing curd on a commercial scale.
d) working out the efficiency of RBCs about their capacity to carry oxygen.

Q20. Slash and burn agriculture is the other name of :
a) jhum cultivation b) step farming c) organic farming d) crop rotation

Q21. If a water body is contaminated with a toxicant, its biomagnifications will be more marked in :
a) water b) planktons c) small fishes d) birds

Q22. The range of biomagnification of DDT in an aquatic food chain, if starting from 0.003 ppm level in water may go at fish eating bird level up to :
a) 0.5 ppm b) 5.0ppm c) 15.0 ppm d) 25.0 ppm

Q23. In the text book you came across “Three Mile Island and Chernobyl disasters associated with accidental leakage of radioactive wastes.” In India we had Bhopal Gas Tragedy. It is associated with which of the following?
a) CO_2 b) Methyl Isocyanate c) CFC d) Methyl Cyanate

Q24. A scrubber in the exhaust of a chemical industrial plant removes :
a) particulate matter of the size 2.5 micrometer or less
b) gases like sulphur dioxide
c) particulate matter of the size 5 micrometer or above
d) gases like methane or ozone

Q25. High value of BOD indicates that :
a) water is pure
b) water is less polluted
c) water is highly polluted
d) consumption of organic matter in the water is higher by the microbes

Q26. Who proved that blends of polyblend (plastic waste) and bitumen, when used to lay roads, enhanced the bitumen’s water repellent properties and helped to increase road life?
a) Amrita Devi b) Ramdeo Misra c) W.H. Pearsall d) Ahmed Khan e) Ramesh Chanedra Dagar

Q27. Phenomenon involving increase in concentration of non-degradable pollutants from lower to higher tropic level is called:

a) biomagnifications b) bioaccumulation c) biodegradation d) bioinvasion

Q28. Which one of the following combinations is wrong ?

a) Rio convention - air pollution
b) Kyoto protocol- climate change
c) Montreal protocol- ozone depletion
d) Ramsar convention- Wetland conservation

Q29. Eutrophication of water bodies leading to killing of fishes is mainly due to non-availability of :

a) food b) light c) oxygen d) essential minerals

Q30. Joint Forest Management Concept was introduced in India during :

a) 1960s b) 1970s c) 1980s d) 1990s