

CLASS-XII (BIOLOGY)

ASSIGNMENT-I (COACHING)

CHAPTER-I

1. Clear cut distinction between vegetative, reproductive and senescent phase is shown by
(a) All annuals and perennials (b) All biennial and perennials
(c) All annuals and biennials (d) All perennials
2. In few fungi and most of the algae
(a) gamete- motile, gamete - motile
(b) gamete - non-motile, gamete - non-motile
(c) gamete - non-motile, gamete - motile
(d) gamete - motile, gamete - non-motile
3. Select correct option w.r.t. chromosomes number in sexual life cycle of apple.
(a) Megaspore - 34; Microspore - 17; PEN-51
(b) Oosphere - 34; Nucellus - 34; Pollengrain - 17
(c) Meiospore - 34; Microspore - 17; Embryo - 34
(d) Meioocyte - 34; Sporocyte - 34; Pollen tetrad - 34
4. Choose correct option w.r.t division during gamete formation and division in zygote for organism having haplontic life cycle respectively.
(a) Mitosis, mitosis (b) Meiosis, Meiosis
(c) Mitosis, meiosis (d) Meiosis, Mitosis
5. Which of the following plant groups shows internal fertilisation only?
(a) Algae (b) Bryophytes (c) Pteridophytes (d) Fungi
options
(a) (b) & (c) (b) (a) & (b) (c) (c) & (d) (d) (a) & (c)
6. Which of the following features cannot be shown by structure which is vital link between two generations ensuring continuity of species?
(a) Thick walled (b) Multicelled
(c) One set of chromosomes (d) Meioocyte (e) Resting structure
options
(a) (a), (b) & (e) (b) (a), (b) & (d)
(c) (b) & (c) (d) (d) & (e)
7. Organisms showing internal fertilisation shows reduction in number of _____ gamete and increase in number of _____ gamete.
(a) Sperm female (b) Sperm, eggs
(c) Egg male (d) male, Female
8. Choose correct option w.r.t. features of different plant groups
9. Synchrony between the maturity of sexes and release of large number of gametes is shown by
(a) All spermatophytes (b) All bryophytes
(c) Most of the algae (d) Most of the land plants
10. Choose correct option w.r.t given below thallus
(a) produce male gamete (b) Form sexual branches as antheridiophore
(c) After fertilisation possess zygote (d) More than one option is correct
11. Which of the following represents the correct sequence of phases in the life cycle of wheat?
[Where J- Juvenile phase, R- Reproductive phase, I- Interflowering period, G- Gap phase, S- Senescence, V- Vegetative phase]
(a) VIRGS (b) JRGRS
(c) JRS (d) VRSG
12. Study the following statements and choose the correct option.
I. Life spans of organisms are correlated with sizes.
II. Death of all individuals is certain
III. The organism's habitat, internal physiology etc. are collectively responsible for how it reproduces.

IV. When offspring is produced by single parent with or without involvement of gametes formation is called asexual reproduction.

13. A portion of underground stem bearing bud forms a new plant in
- (a) *Adiantum*, *Colocasia* and *Vallisneria*
 - (b) *Narcissus*, *Glandilous* and *Freesia*
 - (c) Garlic, Onion and Water hyacinth
 - (d) Turmeric, Ginger and Strawberry
14. Which of the following statement about vegetative reproduction is incorrect?
- (a) Stem cutting is a common horticultural method of plant propagation
 - (b) In trench layering, the basal branch may pegged at several places in soil at regular intervals
 - (c) Stock has large diameter than scion in crown grafting
 - (d) Gootee is an ancient method of propagation in subtropical trees and shrubs
15. Grafting method can be used
- (a) In all tracheophytes
 - (b) Only in gymnospermic plants
 - (c) In cambium containing eustelic plants
 - (d) Only in atactostelic plants
16. Examine the figures A, B, C & D given below and select the right option for female sex organs.
- (a) a, d & f
 - (b) b, d & f
 - (c) a, c & e
 - (d) a, d & e

CLASS-XII (BIOLOGY)
ASSIGNMENT-1 (COACHING)

CHAPTER-II

1. When pollen tube enters embryo sac, one of the following is always destroyed.
 - (a) Antipodal
 - (b) Egg
 - (c) Synergid
 - (d) Polar nucleus
2. Ovules are also called:
 - (a) Megasporophyll
 - (b) Integumented megasporangium
 - (c) Seeds
 - (d) Nucellus
3. What will be ploidy of endosperm and zygote if the cross is made between $6n$ Female plant and $4n$ (Male) plant?
 - (a) (a) $5n, 8n$ (b) $10n, 7n$
 - (b) (c) $8n, 5n$ (d) $6n, 4n$
4. In female gametophyte, which cell is mother cell of endosperm?
 - (a) Synergid
 - (b) Antipodal
 - (c) Central cell
 - (d) Egg
5. In ornithophily, flowers are
 - (a) Dull coloured
 - (b) odourless
 - (c) Nectarless
 - (d) very small
6. A scion is grafted to stock. The quality of fruits produced will be determined by the genotype of
 - (a) Stock
 - (b) Scion
 - (c) Both stock and scion
 - (d) Neither stock and scion
7. Find the correct match
 - (a) Monoecious Plant : Bisexual flower
 - (b) (b) Dioecious Plant : Polygamous plant
 - (c) (c) Haploid parent : Mitogametes
 - (d) Dissimilar gameter : Isogametes
8. Study of pollen grain is called
 - (a) Ethamology
 - (b) Palynology
 - (c) Paleobotany
 - (d) Co-taxonomy
9. Which of the following plant is monocarpic?
 - (a) Mangifera
 - (b) Acacia
 - (c) Bambusa
 - (d) Zizyphus
10. Select correct match
 - (a) Bulbils : Garlic
 - (b) Suckers : Chrysanthemum
 - (c) Corms : Aspidium
 - (d) Bulb : Artichoke

11. Gametophytic generation is dominant in
 - (a) Pteridophytes
 - (b) Gymnosperms
 - (c) Angio sperms
 - (d) Bryophytes
12. A leaf cell of a flowering plant has 22 chromosome, then number of chromosomes would be
 - (a) 11 in gametes
 - (b) 44 in embryo
 - (c) 22 in gametes
 - (d) 11 in a cell of stem
13. In cutting method, auxin hormone is used to
 - (a) Deverop shoots
 - (b) Initiate leaves
 - (c) Initiate roots
 - (d) Develop floral buds
14. In diploid organisms, specialised gamete mother cell produce gametes. These are called
 - (a) Meiocytes
 - (b) Mitocytes
 - (c) Egg
 - (d) Pollen
15. Fleshy bud which produces new plants in hydrophytes is known as
 - (a) Bulbil
 - (b) Sucker
 - (c) Turion
 - (d) Runner
16. The vital link that ensures continuity of species between organisms of one generation and next is
 - (a) Zygote
 - (b) Sperm
 - (c) Pollen grain
 - (d) Egg

CLASS-XII (BIOLOGY)
ASSIGNMENT-II (COACHING)
CHAPTER-II

1. Common floral reward provided by plants to pollinator are
 - (a) Nector and Pollen
 - (b) Pollen and Enzymes
 - (c) Hormones and Nector
 - (d) All of these
 2. Pollen pistil interaction is
 - (a) Chemically mediated process
 - (b) Dynamic process
 - (c) Genetically controlled process
 - (d) More than one option is correct
 3. Emasculation
 - (a) Prevent self-pollination in female parent
 - (b) Prevent cross pollination in female parent
 - (c) Prevent self-pollination in male parent
 - (d) Prevent cross pollination in male parent
 4. The cylindrical portion below the level of cotyledons on embryonal axis is
 - (a) Epicotyl
 - (b) Hypocotyl
 - (c) Radicle
 - (d) Plumule
 5. Suitable environmental conditions for seed germination are
 - (a) Adequate moisture, light, anaerobic conditions
 - (b) Adequate moisture, low temperature, light
 - (c) Adequate moisture, suitable temperature and oxygen
 - (d) Light, water, absence of oxygen
 6. Pericarp is dry in
 - (a) Guava, mango mustard
 - (b) Mango, groundnut, orange
 - (c) Groundnut, mustard
 - (d) Orange, guave, mango
 7. Mark the incorrect statement
 - (a) Outer three layers of anther wall are protective in function
 - (b) Sporogenous tissue, occupies the centre of each microsporangium
 - (c) Cells of tapetum and endothecium show increase in DNA contents by endomitosis and polyteny
 - (d) Ploidy level of microspore tetrad is haploid
 8. Which of the following statement is applicable for all flowering plants?
 - (a) Monosiphonous pollen tube
 - (b) Non-motile and morphologically dissimilar gametes
 - (c) Presence of pollinium
 - (d) Division of generative cell after pollination
 9. Which is **incorrect** statement?
 - (i) Each cell of sporogenous tissue in anther is capable of giving rise to microspore tetrad.
 - (ii) The pollen grain represent male gametophyte.
 - (iii) Pollen grains are usually triangular and 10-15 m in diameter.
 - (iv) Sporopollenin is one of the most resistance organic material
- Options**
- (a) I, II are incorrect but III, IV are correct
 - (b) III, IV are incorrect but I, II are correct
 - (c) I, III are incorrect but II, IV are correct
 - (d) II, IV are correct but I, III are incorrect
10. Which statement is incorrect?
 - (a) Intine is the inner wall of pollen grain and exhibit fascinating array of patterns and designs.
 - (b) The mature pollen grains has two cells, the bigger is vegetative cell and the smaller generative cell which floats in cytoplasm of vegetative cell
 - (c) Carrot grass pollens cause pollen allergy
 - (d) Pollen grains of pea and rose maintain viablility for months
 11. In papaya male and female flowers are present on different plants. It permits
 - (a) Autogamy
 - (b) Geitonogamy
 - (c) Both autogamy and geitonogamy
 - (d) Xenogamy

12. Examine the figure given below and select the right option giving all the four parts a, b, c, and d **Correctly** identify
13. Select **incorrect** statement regarding microsporogenesis in an anther
- (a) Large number of microspore mother cells differentiate in one pollen sac
 - (b) each microsporogenesis involves one meiosis and two mitosis
 - (c) Microspore tetrads may be tetrahedral or isobilateral
 - (d) It consumes tapetum and middle layers
14. In castor, proliferation of the outer integumentary cells at micropylar region
- (a) Lacks hygroscopic ability
 - (b) Attract ants and helps in myrmecophily
 - (c) Is called epiblast
 - (d) Stores sugary substances
15. An angiospermic plant is having 24 chromosomes in its leaf cells. The number of chromosomes present in synergid, pollen grain, nucellus and endosperm will be respectively
- (a) 12, 12, 12, 72
 - (b) 8, 8, 12, 36
 - (c) 12, 12, 24, 36
 - (d) 12, 12, 12, 36
16. Examine the figure given below and select the right option giving all the four parts a, b, c and d. **Correctly** identify.

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ASSIGNMENT-I (COACHING)
CHAPTER-III

1. In human, at the end of the first meiotic division, the male germ cells form
 - (a) Spermatogonia
 - (b) Primary spermatocytes
 - (c) Secondary spermatocytes
 - (d) Spermatids
2. Sertoli cells are found in
 - (a) Ovaries and secrete progesterone
 - (b) Testes and secrete testosterone
 - (c) Seminiferous tubules and after spermiogenesis, sperm heads become embedded in them
 - (d) Adrenal cortex and secrete adrenaline
3. The Graafian follicle ruptures to release.....from the ovary by the process called ovulation.
 - (a) Primary oocyte
 - (b) Secondary oocyte after completing meiosis-II
 - (c) Secondary oocyte after completing meiosis-I
 - (d) mature ovum
4. Which one of the following statements is incorrect about menstrual cycle?
 - (a) The first menstruation begins at puberty and is called menarche
 - (b) Lack of menstruation may also occur due to some environmental factors like stress, poor health
 - (c) Corpus luteum secretes large amounts of progesterone which is essential for maintenance of endometrium
 - (d) In absence of fertilisation, corpus luteum degenerates in luteal phase and new follicles start developing immediately
5. In the fertile human female, approximately on which day of the menstrual cycle (28 days) does ovulation take place?
 - (a) Day 14
 - (b) Day 18
 - (c) Day 1
 - (d) Day 8
6. After ovulation Graafian follicle transforms into
 - (a) Corpus luteum
 - (b) Corpus albicans
 - (c) Corpus callosum
 - (d) Follicular atresia
7. Fertilisation in human beings occurs in
 - (a) Isthmus
 - (b) Ampullary-isthmic junction
 - (c) Uterus
 - (d) Infundibulum
8. Why it is scientifically correct to say that sex of the baby is determined by the father and not by the mother?
 - (a) Human female produces two types of gametes
 - (b) Human male produces one type of gametes
 - (c) Human female is XX, whereas male is XY, 50 percent of sperms carry the X chromosome while other 50% carry Y chromosome
 - (d) All of these
9. In human female, the blastocyst
 - (a) Forms placenta even before implantation
 - (b) Gets implanted in the uterus 3 days after ovulation
 - (c) Gets implanted in the endometrium by trophoblast cells
 - (d) The trophoblast cells get differentiated as the embryo
10. Trophoblast, is not involved in the formation of
 - (a) Protective and trophic membranes
 - (b) Foetal portion of placenta
 - (c) Body of developing embryo
 - (d) Chorionic villi
11. Placenta acts as an endocrine tissue and produces several hormones like
 - A. Human chorionic gonadotropin (hCG)
 - B. Human placental lactogen (hPL)
 - C. Estrogens
 - D. Progesterone
 - (a) A & B
 - (b) B only
 - (c) A, B & C
 - (d) A, B, C & D
12. Which of the following groups of hormones are produced in women only during pregnancy?

- (a) hCG, hPL, relaxin (b) Estrogen, progesterone, hCG
(c) Cortisol, prolactin, thyroxine (d) Prolactin, progesterone, hCG
13. Immediately after implantation, ectoderm, endoderm and the mesoderm of embryo is formed from
(a) Trophoblast (b) Cytotrophoblast
(c) Embryoblast (d) Syncytiotrophoblast
14. The stem cells which have potency to give rise to all tissues and organs are formed from
(a) Trophoblast (b) Umbilical cord
(c) Inner cell mass (d) Placenta
15. Foetal ejection reflex in human female is induced by
(a) Differentiation of mammary gland (b) Pressure exerted by amniotic fluid
(c) Fully developed foetus and placenta (d) Release of oxytocin from pituitary
16. Signals from fully developed foetus and placenta ultimately lead to parturition which requires the release of
(a) Estrogen from placenta (b) Oxytocin from maternal pituitary
(c) Oxytocin from foetal pituitary (d) Relaxin from leydig's cells

CLASS-XII (BIOLOGY)
ASSIGNMENT-I (COACHING)
CHAPTER-IV

1. Which of the following method of contraception has maximum chances of failure?
(a) Rhythm/Periodic abstinence (b) Vasectomy
(c) Condoms (d) IUDs
2. Which of the following is an incorrect statement for periodic abstinence?
(a) The couple should abstain from coitus from day 10 to 17 of the menstrual cycle when ovulation could be expected
(b) 10th to 17th day of the cycle is fertile period, when the chances of fertilisation are high
(c) This prevents the chances of union of male and female gametes
(d) In this method, the ovum and sperms are prevented from physically meeting with the help of barriers
3. Lactational amenorrhoea, is a natural way of birth spacing. It is due to the high level of
(a) FSH and LH hormones (b) Estrogen
(c) Prolactin (d) Progesterone
4. Use of which of the following contraceptive device has increased in recent years due to its additional benefit of protecting the user from contracting STDs and AIDS?
(a) Diaphragms and cervical caps (b) IUDs
(c) Condoms (d) Contraceptive pills
5. Which of the following statement is/are correct about diaphragms, cervical caps and vaults?
A. Barrier methods of contraception B. Cover the cervix during coitus
C. Protect the user from contracting STDs D. They are reusable
(a) A & B only (b) A, B & C
(c) A, B & D (d) A, B, C & D
6. 'Nirodh' is a popular brand of
(a) IUDs for female (b) Contraceptive pill for female
(c) Condom for male (d) Condom for female
7. The diaphragm is a rubber dome shaped structure and stops the sperms from entering into
(a) Vestibule (b) Vagina (c) Cervix (d) Both (1) & (2)
8. Use of spermicidal creams, jellies and foams along with diaphragms, cervical caps and vaults leads to
(a) Increased contraceptive efficiency (b) Prevention of ovulation
(c) Prevention of implantation (d) Increased sexual desire and drive
9. Which of the following is not included under barrier methods of birth control?
(a) Vaginal pouch (b) Diaphragm
(c) Cervical cap (d) Implant
10. Which of the following hormones is/are maintained at high level during hormonal method of birth control?
(a) FSH (b) LH (c) Progesterone (d) Both (1) & (2)
11. Which of the following is world's first non-hormonal oral contraceptive pill for females, developed by scientists at Central Drug Research Institute (CDRI) in Lucknow, India?
(a) Mala-D (b) Saheli (c) Morning after pills (d) PoP
12. Which of the following is a once-a-week pill with very few side effects and high contraceptive value?
(a) Mala-D (b) Saheli (c) Depo-provera (d) Norplant
22. Oral contraceptive pills contain
(a) FSH and LH hormones (b) Progestogen and estrogen combination
(c) Prolactin (d) Mifepristone
23. Contraceptive pills are very effective with lesser side effects used by females. They work by
(a) Inhibiting ovulation (b) Inhibiting implantation
(c) They alter the quality of cervical mucus to prevent/retard the entry of sperms
(d) All of these

24. Which one of the following is the most widely used method of contraception by females in India?
- (a) Oral contraceptive pills (b) Condoms
(c) IUDs (d) Sterilisation
25. Which of the following contraceptive device is inserted by the doctor or trained nurse in the uterus through the vagina?
- (a) Diaphragm (b) Cu-T (c) Condom (d) Vault

CLASS-XII (BIOLOGY)

ASSIGNMENT-I (COACHING)

CHAPTER-V

- Experimental verification of the chromosomal theory of inheritance was given by
(a) Sutton and Boveri (b) Correns
(c) T.H. Morgan (d) Tschermak
- Fruit flies are one of the best materials for genetic studies because of all, **except**
(a) Ability to grow on simple synthetic medium in the laboratory
(b) Short life span
(c) Production of a large number of progeny in each mating
(d) Presence of few externally visible and identifiable contrasting traits
- Generation of non-parental gene combinations is termed as
(a) Linkage (b) Polyploidy
(c) Recombination (d) Aneuploidy
- Initial clue about the genetic/chromosomal mechanism of sex-determination can be traced back to some of the experiments carried out in
(a) Human beings (b) Birds
(c) Insects (d) Plants
- In which of the sex determination both male and female have same number of chromosomes?
(a) XY types (b) ZO type
(c) XO types (d) Both (a) and (c)
- Two different types of gametes in terms of the sex chromosomes, are produced by
(a) Female fruit fly (b) Male butterfly
(c) Male human and female *Drosophila* (d) Female birds
- Individuals having homomorphic sex chromosomes produce
(a) Only one gamete in complete life span (b) One type of gametes
(c) No gametes (d) Two type of gametes
- Which of the following phenomena leads to variation in DNA?
(a) Linkage, mutation (b) Recombination, linkage
(c) Mutation, recombination (d) Aneuploidy, linkage
- Sickle cell-anaemia disorder arises due to
(a) Duplication of a segment of DNA (b) Substitution in a single base of DNA
(c) Deletion of a segment of DNA (d) Duplication in a base pair of RNA
- In pedigree analysis, symbol given for sex unspecified is
(a) (b)
(c) (d)
- Cystic fibrosis, Myotonic dystrophy and Thalassemia are
(a) Chromosomal disorder (b) Autosomal recessive disorders
(c) Mendelian disorder (d) Autosomal dominant disorder
- Which of the following trait shows transmission from carrier female to male progeny?
(a) Autosomal dominant (b) X-linked recessive
(c) Y-linked recessive (d) X-linked dominant
- Phenylketonuria is an inborn error of metabolism that is inherited as
(a) Autosomal recessive trait (b) Sex-linked dominant trait
(c) X-linked recessive trait (d) Autosomal dominant trait
- Which of the following abnormalities is due to autosomal dominant mutation?
(a) Colour blindness (b) Thalassemia
(c) Myotonic dystrophy (d) Haemophilia
- Absence or excess or abnormal arrangement of one or more chromosome results in
(a) Point mutations (b) Chromosomal disorders
(c) Mendelian disorders (d) Gene mutation

16. Mark the Odd one w.r.t. syndrome which occur due to failure of segregation of homologous pair of chromosomes during cell division cycle.

(a) Klinefelter's syndrome

(b) Down's syndrome

(c) Turner's syndrome

(d) Thalassemia

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CHAPTER-IX

1. Semi-dwarf rice varieties were introduced in India in
(a) 1976 (b) 1966 (c) 1986 (d) 1970
2. Select the **incorrect** statement w.r.t. *Saccharum officinarum*
(a) It is a tropical cane (b) It has low sugar content
(c) It had thicker stem (d) It did not grow well in north India
3. Select **correct** statement w.r.t. *Saccharum barberi*
(a) Originally grown in north India
(b) They have high sugar content
(c) They have high yield per unit area of the field
(d) Presence of thicker stem as compared to *S. officinarum*
4. Match the Column I with Column II

Column I (Variety)	Column II (Plant)
a. Sonalika	i. Brassica
b. Parbhani Kranti	ii. Wheat
c. Pusa Komal	iii. Bhindi
d. Pusa Gaurav	iv. Cowpea
(a) a(ii), b(iv), c(iii), d(i)	(b) a(i), b(ii), c(iii), d(iv)
(c) a(ii), b(iii), c(iv), d(i)	(d) a(iii), b(iv), c(i), d(ii)
5. In nung bean resistance to yellow mosaic virus and powdery mildew were introduced by
(a) Tissue culture (b) Mutation (c) Selection (d) Hybridisation
6. Select the variety developed by mutation breeding
(a) Pusa Swarnim (b) Parbhani Kranti (c) Pusa Sadabhar (d) Sharbati Sonora
7. _____ is the process by which genetic variation are created through changes in the base sequence within genes.
(a) Somatic hybrid (b) Micropropagation
(c) Mutation (d) Polyploidy
8. Plant variety himgiri is resistant to
(a) White rust (b) Mosaic virus (c) Bacterial blight (d) Leaf and stripe rust
9. Insect resistance in host crop may be due to
(a) Physiological but not due to morphological character
(b) Morphological, biochemical or physiological character
(c) Biochemical but not due to morphological character
(d) Morphological but not due to biochemical character
10. Resistance to jassids in cotton is related to following character of cotton
(a) Morphological (b) Physiological
(c) Biochemical (d) Biochemical & Physiological
11. Maize lead to resistance to maize stem borers due to
(a) High aspartic acid and high nitrogen content
(b) Low nitrogen and low sugar content
(c) Low sugar content and low aspartic acid
(d) More than one is correct
11. Hairy leaves in cotton provide resistance against
(a) Bollworm (b) Sawfly (c) Jassids (d) Fungal infection
12. Smooth leaved and nectarless cotton varieties do not attract
(a) Bacteria (b) Fungi (c) Sawfly (d) Bollworm
13. Resistance to cereal leaf beetle in wheat is due to
(a) Smooth leaved trait (b) High aspartic acid
(c) Solid stem (d) Hairy leaves
14. _____ people in the world do not have adequate food to meet their daily requirements.
(a) 5 million (b) 3 billion (c) 840 million (d) 10 million
15. Atlas -66 is
(a) Maize variety
(b) Wheat variety with high protein content
(c) Brassica variety with resistance against aphids
(d) Cowpea variety with resistance against bacterial blight

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ASSIGNMENT-I (COACHING)
CHAPTER-X

1. Find the odd one w.r.t. distilled alcoholic beverages
(a) Rum (b) Beer (c) Brandy (d) Whisky
2. The chemicals which are “pro-life” with reference to human beings
(a) Are regarded as one of the most significant discovery of twenty first century
(b) Have rarely contributed to human welfare
(c) Are produced by some plants and all animals
(d) Can kill or retard the growth of disease-causing microbes
3. Which of the following microbe is the source of first antibiotic?
(a) Penicillium notatum (b) Staphylococci
(c) Aspergillus niger (d) Bacillus brevis
4. The first antibiotic was discovered accidentally by _____ A _____ while working on _____ B _____.
(a) A-Waksman; B-Streptococcus (b) A-Fleming; B-Penicillium notatum
(c) A_ Waksman; B-Bacillus brevis (d) A-Fleming; B-Staphylococci
5. Commercial extraction of penicillin was done by
(a) Alexander Fleming (b) Ernest Chain
(c) Howard Florey (d) More than one option is correct
6. Match the following (column-I with column-II)

Column I (Microbes) a. Aspergillus niger b. Clostridium butylicum c. Acetobacter aceti d. Lactobacillus (a) a(i), b(ii), c(iii), d(iv) (c) a(ii), b(iv), c(iii), d(i)	Column II (Organic acid) i. Butyric acid ii. Citric acid iii. Lactic acid iv. Acetic acid (b) a(ii), b(i), c(iv), d(iii) (d) a(iii), b(i), c(iv), d(ii)
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7. _____ are used in detergent formulations and are helpful in removing oily stains from laundry.
(a) Ligases (b) Proteases (c) Lipases (d) Pectinases
8. Select the microbe which is the source of ‘clot buster’ enzyme
(a) Bacterium; Lactobacillus (b) Fungi; Aspergillus niger
(c) Fungi; Penicillium notatum (d) Bacterium; Streptococcus
9. An immunosuppressive agent used in organ transplant patients is
(a) Streptokinase (b) Statins
(c) Cyclosporin-A (d) Lipases
10. The product of Monascus purpureus has been commercialised as
(a) Immunosuppressive agent (b) Blood-cholesterol lowering agent
(c) Clot buster (d) Bottled juices clarifying agents
11. _____ are produced by yeast and act by competitively inhibiting the enzymes responsible for synthesis of cholesterol.
(a) Cyclosporin-A (b) Penicillin
(c) Statins (d) Alcohol
12. Treatment of waste-water is done by
(a) Photoautotrophic microbes, naturally present in sewage
(b) Chemoautotrophic microbes, naturally present in sewage
(c) heterotrophic microbes naturally present in sewage
(d) Heterotrophic microbes inoculated in sewage from outside only
13. In a sewage treatment plant, primary treatment is
(a) Physical process which involves sedimentation only
(b) Physical process which involves both filtration and sedimentation
(c) Biological process which involves formation of primary sludge and effluent
(d) Biological process which involves both filtration and sedimentation

14. During primary treatment, all solids that settle form a A and the supernatant forms B
(a) A-Primary sludge; B-effluent (b) A-Primary sludge; B-secondary effluent
(c) A-Activated sludge; B-clarified effluent (d) A-Activated sludge; B-effluent
15. What are flocs?
(a) Masses of anaerobic bacteria
(b) Masses of aerobic fungi only
(c) Masses of anaerobic bacteria and fungi
(d) Masses of aerobic bacteria associated with fungal filaments
16. Identify the stage of sewage treatment shown below.
(a) Primary treatment (b) Secondary treatment
(c) Tertiary treatment (d) Filtration and sedimentation
17. What happens to activated sludge?
(a) It is generally released into natural water bodies like rivers and streams
(b) It is completely pumped back into aeration tank to serve as inoculum
(c) The major part of the sludge is pumped into large tanks called anaerobic sludge digesters
(d) It undergoes sequential filtration