

Studentpad

K-CET BIOLOGY PAPER 2022-23

Time : 120 Min

Bio : Full Portion Paper

Marks : 60

01) For providing evidence in favour of semiconservative way of DNA replication; Taylor, Woods and Hughes performed experiments on

- A) Vicia faba
- B) Allium sepa
- C) Pisum sativum
- D) Drosophila

02) Colostrum in the first milk of mother helps to achieve ____ immunity by the child.

- A) neutral
- B) active
- C) passive
- D) Both (A) and (B)

03) Natural genetic engineer is

- A) Escherichia coli
- B) Agrobacterium tumefaciens
- C) Pseudomonas sp.
- D) Bacillus subtilis

04) Which biological factor is responsible for poor vegetation in deserts?

- A) Native mankind
- B) Low rainfall
- C) Poor fertility of soil
- D) Grazing by animals and goats

05) Oxygen evolution is connected with which of the following part?

- A) Photosystem II
- B) Photosystem I
- C) RUBP enzyme
- D) Cyclic photophosphorylation

06) _____ is an example of endomycorrhiza.

- A) Glomus
- B) Nostoc
- C) Agaricus
- D) Rhizobium

07) The therapy given in 1990 to a four-year-old girl with adenosine deaminase (ADA) deficiency is

- A) gene therapy
- B) chemotherapy
- C) radiation therapy
- D) immunotherapy

08) In Mucor, asexual reproduction takes place by

- A) Zygo spores
- B) Zoogametes
- C) Spores
- D) Motile zoospores

09) In over 60 % of angiosperms, pollen grains are shed at _____ stage.

- A) two-celled
- B) four-celled
- C) three-celled

D) either A or B

10) The trapping centre of light energy in photo system-I is

- A) P-720
- B) P-700
- C) P-680
- D) P-660

11) The end of fragments of DNA molecule are sticky because of

- A) endonuclease
- B) free methylation
- C) unpaired bases
- D) calcium ions

12) In TCA cycle, substrate level phosphorylation takes place during which of the following conversion?

- A) Oxaloacetic acid to citric acid
- B) Succinyl CoA to succinic acid
- C) Fumaric acid to malic acid
- D) Succinic acid to Fumaric acid

13) The blood of AB group donor can be transfused to a person with the blood group

- A) AB
- B) A
- C) B
- D) O

14) What are ovarioles?

- A) Structural units of ovaries of female cockroach
- B) Equivalent to uterus in function
- C) The ligaments that connect ovaries to the abdominal walls
- D) Structural units of gonads of male cockroach

15) In _____ "assisted reproductive technology" (ART), test tube baby procedure is applied.

- A) Zygote intrafallopian transfer
- B) In vitro fertilization and embryo transfer
- C) Intracytoplasmic sperm injection
- D) Gamete intrafallopian transfer

16) Lymphoid tissue is found in

- A) Tonsils
- B) Thymus
- C) lymph nodes
- D) All of these

17) Starch sheath is also known as

- A) epidermis
- B) hypodermis
- C) casparian strip
- D) none of these

18) Rheumatoid arthritis is an example for

- A) active immune response
 B) auto immune response
 C) immune response
 D) passive immune response

19) _____ is a soluble RNA.

- A) rRNA
 B) hnRNA
 C) mRNA
 D) tRNA

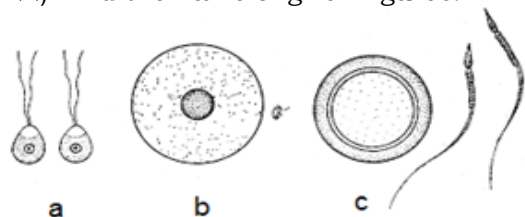
20) Among various categories of threatened species, what is the percentage of angiosperms categorized as vulnerable?

- A) 19%
 B) 14%
 C) 41%
 D) 51%

21) Removal of soil by the action of wind and water is known as

- A) Calcification
 B) Salination
 C) Soil erosion
 D) Soil conservation

22) Find the name of given figures.



- A) a-isogametes of Fucus, b-heterogametes of Cladophora, c-heterogametes of humans
 B) a-heterogametes of Cladophora, b-heterogametes of Homo sapiens, c-isogametes of Fucus
 C) a-isogametes of Cladophora, b-heterogametes of Fucus, a heterogametes of human beings
 D) a-isogametes of Cladophora, b-heterogametes of Homo sapiens, a heterogametes of Fucus

23) _____ is a germination of seed within fruit.

- A) Ovipary
 B) Vivipary
 C) Epigeal
 D) Hypogeal

24) Pinus produces

- A) Naked seeds in cones
 B) No vascular tissues
 C) Flowers
 D) No seeds

25) Antibiotics are mostly obtained from

- A) Virus
 B) Bacteria (Actinomycetes)
 C) Angiosperms
 D) Fungi

26) A contraceptive pill contains _____.

- A) spermicidal salts
 B) chemicals that cause automatic abortion
 C) progesterone and estrogen
 D) chemicals that prevents fertilization of ovum

27) Which organization publishes the Red list of species?

- A) ICFRE
 B) IUCN
 C) WWF
 D) UNEP

28) Mark the correct statement.

- A) *Saccharomyces cerevisiae* is used as clot buster.
 B) *Acetobacter aceti* produces citric acid.
 C) *Penicillium notatum* restrict the growth of *Staphylococci*.
 D) Methanogens are found in aerobic conditions.

29) Determine the common means of transmission of AIDS.

- A) Placental transfer
 B) Sexual intercourse
 C) Blood transfusion
 D) All of these

30) From the following groups, mark the one which has only secondary metabolites?

- A) Glycine, gums, serine, diterpenes
 B) Arbin, cellulose, arginine, tyrosine
 C) Carotenoids, phenylalanine, curcumin, rubber
 D) Conclavin- A, morphine, codeine, vinblastine

31) _____ is an example of alien species invading a new ecosystem resulting in biodiversity losses.

- A) Introduction of water hyacinth into India.
 B) Introduction of Nile Perch into Lake Victoria in East Africa.
 C) Introduction of African catfish into Indian rivers.
 D) All of the above.

32) Which of the following statements is incorrect?

- A) Sea-anemone on hermit-crab is an example of protocoeperation
 B) Lichen, an association of fungus and algae is an example of Mutualism
 C) Mutualism, protocoeperation, commensalism cannot be included under Symbiosis
 D) Those Epiphytes which use other plants for support only and not for water or food supply are examples of Commensation

33) Choose the correct option: Herbarium sheets are arranged according to the system of

- classification and should have information about
 A) date and time of collection, English, local and botanical names, class, collector's name
 B) time and place of collection, English, local and botanical names, phylum, collector's name
 C) date and place of collection, English, local and botanical names, order, collector's name
 D) date and place of collection, English, local and botanical names, family, collector's name.

34) Artificial hybridisation is one of the major approaches of crop improvement programme. For the bisexual flower it includes the following steps, find their correct sequence.

- A) Bagging, pollination, rebagging
 B) Pollination, bagging, rebagging
 C) Emasculation, bagging, pollenation, rebagging

D) Bagging, emasculation, pollination, rebagging

35) The plasma membrane is composed of

- A) Lipids
- B) Proteins
- C) Carbohydrates
- D) Both proteins and lipids

36) The Environment Protection Act was passed in

- A) 1974
- B) 1968
- C) 1981
- D) 1986

37) In onion root tip during metaphase stage of mitosis, what will be the number of kinetochores?

- A) 8
- B) 4
- C) 16
- D) 32

38) A cross section at the midpoint of the middle piece of a human sperm will show

- A) Centriole and mitochondria
- B) Centriole, mitochondria and 9+2 arrangement of microtubules
- C) Mitochondria and 9+2 arrangement of microtubules
- D) 9+2 arrangement of microtubules only

39) Which enzyme plays an important role in transcription?

- A) DNA dependent DNA polymerase
- B) DNA dependent RNA polymerase
- C) RNA dependent DNA polymerase
- D) RNA dependent RNA polymerase

40) In the following abnormalities of the eye, which one is a serious condition that leads to blindness?

- A) Presbyopia
- B) Hypermetropia
- C) Myopia
- D) Glaucoma

41) If _____, then only fertilisation in humans is practically feasible.

- A) the sperms are transported into cervix within 48 hrs of release of ovum in uterus
- B) the ovum and sperms are transported simultaneously to ampullary -isthmic junction of the cervix
- 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

42) Match the following columns correctly.

	Column I		Column II
a	XO type	1	Male heterogamety
b	XY type	2	Female heterogamety
c	ZW type		

a	b	c
2	1	1

A)

a	b	c
2	2	1

B)

a	b	c
1	1	2

C)

a	b	c
1	2	2

D)

43) A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using ____ enzyme.

- A) Taq polymerase
- B) EcoRI
- C) polymerase III
- D) ligase

44) Genes that are similar in phenotypic effect when present separately, but together interact to produce a different trait and ratio is 9 : 7 in F_2 generation. What are such genes known as?

- A) Complementary genes
- B) Supplementary genes
- C) Hypostatic genes
- D) Epistatic genes

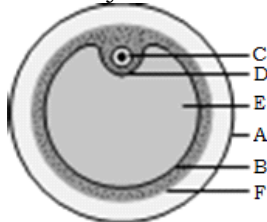
45) Identify an examples in which CO_2 gas is produced.

- a. Fermentation of dough
 - b. Cheese making
 - c. Production of beverages
 - d. Biogas production
 - e. Alcoholic fermentation
 - f. Lactic acid fermentation
- A) a, b, c and d
 - B) a, b, c and e
 - C) a, b, c, d and e
 - D) a, b, c, d, e and f

46) Oxyhaemoglobin is an unstable compound because

- A) Haemoglobin is a complex pigmented protein
- B) There is a physical bonding between oxygen and haemoglobin
- C) There is a chemical bonding between oxygen and haemoglobin
- D) One molecule of haemoglobin combines with four molecules of oxygen

47) In the diagram of section of Graafian follicle, different parts are indicated by alphabets; choose the answer in which these alphabets have been correctly matched with the parts they indicate.....



- A) A = Membrana granulosa
- B = Theca externa
- C = Ovum
- D = Cumulus oophorus
- E = Antrum

- F = Theca interno
 B) A = Theca externa
 B = Theca interna
 C = Ovum
 D = Cumulus oophorus
 E = Antrum
 F = Membrana granulosa
 C) A = Membrana granulosa
 B = Theca interna
 C = Ovum
 D = Cumulus oophorus
 E = Anturm
 F = Theca externa
 D) A = Theca externa
 B = Theca interna
 C = Ovum
 D = Membrana granulosa
 E = Anturum
 F = Cumulus oophorus

48) In order to induce the bacterial uptake of plasmids, firstly treating with _____ the bacteria are made 'competent'.

- A) potassium chloride
 B) sodium chloride
 C) magnesium chloride
 D) calcium chloride

49) Which enzyme is essential for the transport of CO_2 as bicarbonate in blood?

- A) Succinic dehydrogenase
 B) Carboxypeptidase
 C) Carbonic anhydrase
 D) Thrombokinas

50) Choose the correct option: Gene therapy is a treatment that can be done with

- A) child or embryo only
 B) adults only
 C) pregnant mothers only
 D) none of the above

51) Plasmids so found in bacteria are

- A) Food particles
 B) Extra nuclear DNA
 C) Dead protoplasmic parts
 D) None of the above

52) In the case of *Antirrhinum* sp. the recessive trait is seen in progenies because of the

- (i) The normal enzyme
 (ii) less-efficient enzyme
 (iii) Non-functional enzyme
 (iv) No enzyme at all

Find the correct option among i-iv:

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

53) The vessel leading blood (containing nitrogenous waste) into the Bowman's capsule is known as

- A) Afferent arteriole
 B) Efferent arteriole
 C) Renal vein

D) Renal artery

54) *Escherichia coli* with completely radioactive DNA was allowed to replicate in non-radioactive medium for two generations. What is the percentage of bacteria with radioactive DNA?

- A) 12.5%
 B) 25%
 C) 50%
 D) 100%

55) Photoperiodism was first characterized in which of the following plants?

- A) Potato
 B) Tobacco
 C) Cotton
 D) Tomato

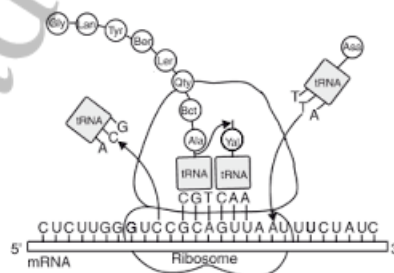
56) If a man Rh^+ marries a lady Rh^- , then

- A) First child will survive
 B) First child will die
 C) No child will be born
 D) None of these

57) The toxin control _____ is produced by cryIIAb and cryIAb.

- A) Cotton bollworms and corn borer respectively
 B) Corn borer and cotton bollworms respectively
 C) Nematodes and tobacco budworms respectively
 D) Tobacco budworms and nematodes respectively

58) Find the process in the following figure.



- A) Central dogma
 B) Translation
 C) Replication
 D) Transcription

59) An abnormal human male phenotype involving an extra X chromosome (XXY) is a case of

- A) Klinefelter syndrome
 B) Edward syndrome
 C) Intersex
 D) Down's syndrome

60) One of single internodal branches are found in

- A) Asparagus
 B) Euphorbia
 C) Lilium
 D) Casuarina