

BIOLOGY

1) During which geological period order Gnetales of gymnosperms are evolved?

(A) Cretaceous

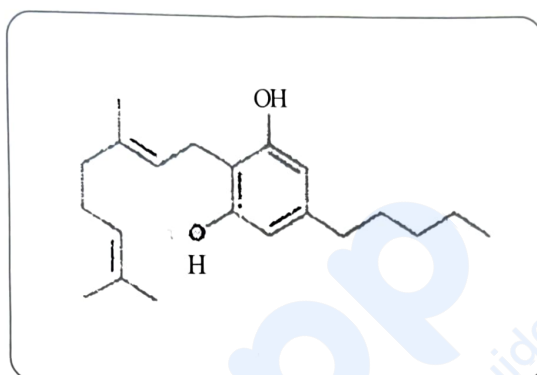
(B) Jurassic

(C) Triassic

(D) Permian

2) A) For General Students

The molecule which shows, the given structure is naturally obtained from which plant?



(A) Atropa belladonna

(B) Erythroxylum coca

(C) Cannabis sativa

(D) Papaver somniferum

2) B) For Blind Students.

~~Which drug is obtained by acetylation of morphine.~~

(A) ~~Coke~~

(B) Hashish

(C) ~~Smack~~

(D) ~~Charas~~

(Space for Rough Work)

3) In the given column, which one is mis-matched.

Option	Microbes	Product	Use
(A)	Saccharomyes cerevisiae	Ethanol	Fermented beverages
(B)	Monascus purpureus	Cyclosporin-A	Immuno sup present
(C)	Streptococcus	Streptokinase	Clot buster
(D)	Aspergillus niger	Citric acid	Industry

4) Enzyme used for extension process in PCR method.

(A) DNA Ligase

(B) DNA Helicase

(C) Restriction Endonuclease

(D) Taq polymerase

5) RNA Interference involves silencing of specific mRNA due to complimentary _____ molecule that binds to and prevents translation of the mRNA.

(A) ss-DNA

(B) ds-RNA

(C) ss-RNA

(D) ds-DNA

6) Who's field experiment showed that on the rocky sea coast, the larger and competitively superior barnacle excludes smaller barnacle?

(A) Verhulst-Pearl

(B) Gause

(C) Mac Arthur

(D) Connell

(Space for Rough Work)

- 7) In an ecosystem 1000 J energy is stored in producer level, then how much energy will be obtained in secondary consumer level?

(A) 10 J

(B) 0.1 J

(C) 100 J

(D) 1 J

- 8) The term Biodiversity is popularised by _____

(A) Vonhumbolt

(B) David Tilman

(C) Edward Wilson

(D) Paul Ehrlich

- 9) Choose the correct option for column - I, II and III.

Column - I	Column - II	Column - III
(i) Monoecious	(p) Prevent both autogamy and geitonogamy	(x) Caster, Maize
(ii) Dioecious	(q) Prevent autogamy but not geitonogamy	(y) Papaya, Date palm

(A) I - i II - q III - x

(B) I - ii II - q III - y

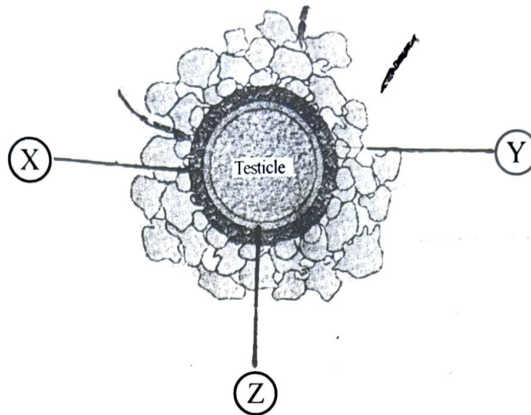
(C) I - ii II - p III - x

(D) I - i II - q III - y

(Space for Rough Work)

10) A) For General Students.

In the given diagram, choose the correct option for labelled 'X' 'Y' and 'Z'



- (A) X - Corona radiata Y - Perivitelline space Z - Zona pellucida
(B) X - Zona Pellucida Y - Perivitelline space Z - Corona radiata
(C) X - Corona radiata Y - Zona pellucida Z - Perivitelline space
(D) X - Zona pellucida Y - Corona radiata Z - Perivitelline Space

10) B) For Blind Students

In human during fertilisation entry of additional sperms into ovum is blocked by

- (A) Theca layer (B) Corona radiata
(C) Perivitelline space (D) Zona pellucida

11) In the following STIs, which one is not completely curable?

- (A) Gonorrhoea, HIV, Chlamydisias (B) Hepatitis - B, Genital herpes, HIV
(C) Trichomoniasis, HIV, Syphilis (D) Genital warts, Chlamydisias, HIV

(Space for Rough Work)

- 12) A colour blind man marries a female with homozygous normal vision. What will be the possibility of colour blindness in their male children?
- (A) 0% (B) 25%
(C) 50% (D) 100%
- 13) In human genome project, among two major approaches sequencing the whole set of genome, that contained all the coding and non-coding sequence and later assigning different regions in the sequence with functions is called _____
- (A) Single nucleotide polymorphism (B) Expressed Sequence Tags
(C) Sequence Annotation (D) Bioinformatics
- 14) In natural selection, more individuals acquire value other than the mean character value, which indicates
- (A) Directional (B) Disruptive
(C) Stabilising Directional both (D) Stabilising
- 15) Snake venom antibody is the antibody prepared against snake venom is the example of which type of immunisation?
- (A) Allergies (B) Passive immunity
(C) Auto immunity (D) Active immunity
- 16) Which group of microbes are acting as bio control agents? Select the correct option.
- (A) Azospirillum, Anabaena, Bacillus thuringiensis
(B) Trichoderma, Baculo virus, Bacillus thuringiensis
(C) Azotobacter, Trichoderma, Glomus
(D) Baculo virus, Oscillatoria, Rhizobium
- 17) What is the correct nomenclature for restriction enzyme - 1, obtained from Bacillus amyloliquefaciens H?
- (A) Bam IH (B) Baam HI
(C) Bac HI (D) Bam HI

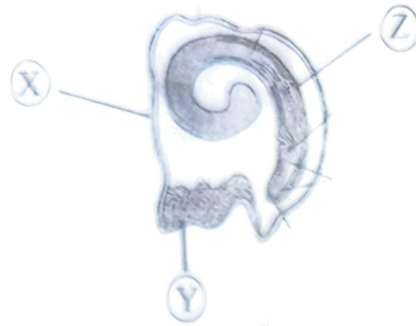
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- 18) In which kind of population interaction, one species is harmed whereas the other is unaffected?
- (A) Parasitism (B) Commensalism
(C) Amensalism (D) Competition
- 19) Which two parts of the different plants can be fused for the formation of new plant in somatic hybridisation?
- (A) Eggs (B) Protoplast
(C) Male - female gamete (D) Pollen grain
- 20) Sparrow eats seeds. After wards it eats insects. In which trophic level, sparrow belongs in both situations respectively?
- (A) Primary - Tertiary (B) Secondary - Tertiary
(C) Tertiary - Quarternary (D) Primary - Secondary
- 21) Oxygen available from the nature belongs to which biodiversity conservation category?
- (A) Ethical (B) Broadly utilitarian
(C) Intangible benefits (D) Narrowly utilitarian
- 22) Assertion : (A) - Geitonogamy is genetically similar to autogamy
Reason : (R) - In geitonogamy pollen grains come from the same plant.
- (A) A is wrong but R is correct
(B) A is correct but 'R' is wrong
(C) A and R both are correct, 'R' is not correct explanation of A
(D) A and R both are correct. 'R' is the correct explanation of A

(Space for Rough Work)

23) A) For General Students.

Identify 'X' 'Y' and 'Z' from the given diagram.



~~(A)~~ X - Pericarp : Y - Endosperm : Z - Scutellum

(B) X - Pericarp : Y - Root tip : Z - Endosperm

☒ (C) X - Seed coat : Y - Endosperm : Z - Cotyledon

(D) X - Seed coat : Y - Cotyledon : Z - Endosperm

23) B) Only for Blind Students.

In the grass family the cotyledon is called

~~(A) Coleoptile~~

~~(B) Epicotyl~~

~~(C) Scutellum~~

(D) Hypocotyl

(Space for Rough Work)

24) The seminiferous tubules of the testis open into 'X' through 'Y'

- ☒ (A) X - Vasa efferentia, Y - rete testis
- ☐ (B) X - Vas deferens Y - Epididymis
- ☐ (C) X - rete testis Y - Epididymis
- ☐ (D) X - Vas deferens Y - rete testis

25) Which of the following contraceptive method can be used for male and female both?

- (A) Implants and Sterilisation
- (B) IUDs and Barriers
- (C) Barriers and Implants
- ☒ (D) Barriers and Sterilisation

26) Which term is coined for the physical association of 2 genes on the same chromosome?

- (A) Recombination
- ☒ (B) Linkage
- (C) Pleiotropy
- (D) Gene flow

27) What is the full form of UTR?

- (A) Unbound Transcribed Regions
- ☒ (B) Un Translated Regions
- (C) Ultra Transcribed Regions
- (D) Uni Translated Regions

(Space for Rough Work)

28) Match Column - I and Column - II and choose correct option.

	Column - I		Column - II
(i)	65 million years ago	(p)	Sea weeds existed
(ii)	350 million years ago	(q)	Invertebrates formed
(iii)	500 million years ago	(r)	Jawless fish evolved
(iv)	320 million years ago	(s)	Dinosaurs disappeared

~~(A)~~ (i - q), (ii - p), (iii - s), (iv - r)

~~(B)~~ (i - s), (ii - r), (iii - p), (iv - q)

~~(C)~~ (i - r), (ii - p), (iii - s), (iv - q)

~~(D)~~ (i - s), (ii - r), (iii - q), (iv - p)

29) Which chemical causes the side-effect of enlargement of clitoris in female?

(A) Narcotic analgesics

(B) Peptide Hormone

~~(C)~~ Anabolic steroids

(D) Diuretics

30) Which of the following bacteria is free-living in the soil?

~~(A)~~ Azospirillum

(B) Rhizobium

(C) Oscillatoria

(D) Trichoderma

31) The separated bands of DNA are cut out from the agarose gel and extracted from the gel piece. This step is known as _____

(A) Extension

(B) Biolistics

(C) Micro-injection

~~(D)~~ Elution

 (Space for Rough Work)

32) At present, about _____ recombinant therapeutics have been approved for human-use, the world over.

☒ (A) 30

(B) 15

(C) 25

(D) 10

33) In a forest, there are initially 100 deer. Over a certain, period 30 are born and 10 die. Assuming food is abundant and predators are few. Calculate the intrinsic rate of natural increase for that population.

(A) 0.015

☒ (B) 0.2

(C) 0.18

(D) 0.4

34) In the given statements, select the correct option for the process of decomposition.

(1) Moist environment favour decomposition.

(2) Low temperature and anaerobiosis inhibit decomposition.

(3) Decomposition is slower, if detritus is rich in nitrogen.

(4) Decomposition is quicker if detritus is rich in chitin.

(5) Warm environment favour decomposition.

(A) 1, 5 are true

(B) 3, 4, 5 are true

☒ (C) 1, 2, 5 are true

☒ (D) 1, 2, 3, 5 are true

(Space for Rough Work)

35) Match Column - I and Column - II. And Select the correct option.

Column - I	Column - II
(i) dodo	(p) Africa
(ii) quagga	(q) Mauritius
(iii) thylacine	(r) Russia
(iv) steller's sea cow	(s) Australia

☒ (i - q), (ii - p), (iii - s), (iv - r)

(B) (i - s), (ii - r), (iii - q), (iv - p)

(C) (i - q), (ii - r), (iii - s), (iv - p)

(D) (i - r), (ii - s), (iii - p), (iv - q)

36) In an angiosperm plant endosperm cell is having 24 chromosomes, then how many chromosomes are present in MMC of the same plant?

☒ (A) 8

(B) 12

☒ (C) 16

(D) 32

37) Which of the following hormone is not produced from the placenta?

☒ Relaxin

(B) Estrogen

(C) Human placental Lactogen

☒ Gonadotropin

(Space for Rough Work)

- 38) In the given assisted reproductive technologies which method is taking place inside the body for the process of fertilisation?
- (A) ICSI
- (B) IUT
- (C) ZIFT
- ☒ (D) GIFT
- 39) Select the incorrect option for mutation.
- (A) Results in changes in genotype and phenotype
- ☒ (B) According to Hugo-de-Vries mutation is small and directional
- (C) According to De-Vries mutation is the reason for speciation
- (D) Results in alternation of DNA sequence
- 40) In Meselson and Stahl's Experiment, heavy DNA molecule could be distinguished from the normal DNA by centrifugation in a _____ density gradient.
- (A) Trichloro acetic acid
- (B) Ethidium bromide
- ☒ (C) CsCl
- (D) NH_4Cl

(Space for Rough Work)