

# Biology

**Time 70 Mins****60 Marks**

1. Sporopollenin is degraded by
  - A. Enzyme
  - B. High Temperature
  - C. Strong acid and alkali
  - D. None of these
2. Geitonogamy is
  - A. Functionally self Pollination and genetically cross pollination
  - B. Genetically Self pollination and functionally Cross pollination
  - C. Cross pollination both genetically and functionally
  - D. Self- pollination both generating and functionally
3. Persistent Nucellus perisperm found in
  - A. Castor
  - B. Pepper
  - C. Apple
  - D. Coconut
4. The Semen of human male contain
  - A. Seminal plasma
  - B. Sperm
  - C. Enzymes
  - D. Both A and B
5. Choose the incorrect 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
    1. I and III
    2. II and IV
    3. I and IV
    4. I and II
6. The fetus develops limbs and digits by the end of
  - A. 1<sup>st</sup> Month of pregnancy
  - B. 2<sup>nd</sup> Month of pregnancy
  - C. 3<sup>rd</sup> Month of pregnancy
  - D. 5<sup>th</sup> month of pregnancy
7. Which country commenced the action plan at national level to achieve total reproductive health as social goal?
  - A. China
  - B. Japan
  - C. India
  - D. Argentina

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8. Match the following select the correct option

Column 1 Natural Method of Contraception	Column 2 (Characteristic)
a. Coitus Interruptive	1. Avoid intercourse during ovulation
b. Lactational amenorrhea	2. Avoid insemination into vagina
c. Periodic abstinence	3. Ovum is not available for fertilizations

	a	b	c
A.	3	1	2
B.	1	3	2
C.	3	2	1
D.	2	3	1

9. According to Mendel Characters are controlled by discrete units called

- A. Genes
- B. Factors
- C. Alleles
- D. Allelomorph

10. Morgan Performed his experiments

- A. Garden pea
- B. Drosophila
- C. Snap dragon
- D. Honeybee

11. A disorder caused due to the absence of one of the 'x' Chromosome is

- A. Turner's syndrome
- B. Down's Syndrome
- C. Klinefelter's Syndrome
- D. Edwards syndrome

12. What is the function of deoxyribonucleoside triphosphate

- A. It acts as Substrate
- B. Provide energy for polymerization
- C. Both A and B
- D. It is a product formed after Polymerization

13. Regulatory gene of Lac operon is

- A. P- Gene
- B. I- Gene
- C. O- Gene
- D. Z- Gene

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14. Method I approaches of HGP include
- Excess Sequence Tags
  - Express sequence tags
  - Exercise sequence tags
  - Exerted sequence tags
15. In cake urchin DNA, which is double stranded 17% of the bases were shown to be cytosine the percentages of the other three bases expected to be present in this DNA are
- G- 17%, A-16.5%, T- 32.5%
  - G-17%, A-33%, T-33%
  - G-8.5% A-50%, T-24,5%
  - G-34%, A-24.5%, T-24.5%
16. Which of the following Structure represent homology
- Wings of butterflies and Birds
  - Eyes of octopus and mammals
  - Thoms and tendrils of Bougainvillea and Cucurbita
  - Flippers of penguins and Dolphins
17. Which of the following serves as an indicator of atmospheric Pollution
- Lichens
  - Rhizopus
  - Penicillin
  - Lycopodium
18. The Chronological Order of human evolution from early to recent is
- Australopithecus > Ramapithecus > Homo habilis > Homo erectus
  - Ramapithecus > Australopithecus > Homo habilis > Homo erectus
  - Ramapithecus > Homo habilis > Australopithecus > Homo erectus
  - Austrolopthecus > Homo habilis > Romapithecus > Homo erectus
19. Choose the correct statement about diseases
- Disease Adversely effects functioning of one Or more organs
  - A disease is characterized by the appearance of various signs and symptoms
  - AIDS is a fatal non infectious disease
  - Cancer is an infectious disease
20. Match the column I (Disease) with Column II (Causative Agents) and Choose the Correct option from codes given below

Column I	Column II
a. Typhoid	1. Entamoeba Histolytica
b. Malaria	2. Salmonella Typhi
c. Amoebiasis	3. Rhino Viruses
d. Common cold	4. Plasmodium Vivax

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	A	B	C	D
A	2	4	1	3
B	4	3	2	1
C	1	2	3	4
D	3	1	2	4

21. Antivenom injection contains preformed antibodies while polio drop that are administered into the body contain
- A. Activated Pathogen
  - B. Harvested antibodies
  - C. Gamma Globulin
  - D. Attenuated Pathogen
22. Technique used for separation of DNA fragments are
- A. Gel Electrophoresis
  - B. DNA Fingerprinting
  - C. PCR
  - D. DNA Cloning
23. Down Stream processing includes
- A. Separation
  - B. Purification
  - C. Both A & B
  - D. Isolation
24. Which of the following is a restriction endonuclease
- A. Hind II
  - B. Protease
  - C. DNAase I
  - D. RNAase
25. Bacillus thuriengiensis forms protein crystals which contain
- A. Simple protein
  - B. Non-toxic insecticidal protein
  - C. Toxic insecticidal protein
  - D. Simple lipid

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26. When was the first transgenic COW Rosie produced.
- 1979
  - 1997
  - 1996
  - 1999
27. \_\_\_\_\_ contribute to an increase in population density.
- Natality and emigration
  - Mortality and emigration
  - Mortality and immigration
  - Natality and immigration
28. Which growth model is considered as more realistic one?
- Exponential growth
  - Constant growth
  - Logistic growth
  - Carrying capacity
29. Camouflage means
- Cryptically coloured
  - Feeding on young ones of other species
  - Poisonous
  - Feeding on own species

30. Match the following

	Column I		Column II
A	Marine fish	I	Brood parasitism
B	Cuscuta	II	Copepod
C	Cattle egret	III	Grazing Cattle
d	Koel	IV	Parasite

a      b      c      d

- II      IV      III      I
- III      IV      I      II
- IV      II      III      I
- I      III      IV      II

31. What is the basic requirement for any ecosystem to function and sustain
- A. Primary production
  - B. Decomposer
  - C. Constant input of solar energy
  - D. Nutrient cycle
32. The correct way of decomposition
- A. Fragmentation → leaching → humification → catabolism → Mineralisation
  - B. Fragmentation → leaching → catabolism → humification → Mineralisation
  - C. Fragmentation → catabolism → leaching → Mineralisation → humification
  - D. Fragmentation → Mineralisation → catabolism → leaching → humification
33. How many countries pledged in the World summit on sustainable development field in 2002 in Johannesburg?
- A. 200
  - B. 180
  - C. 170
  - D. 190
34. Which one is not an example of Alien species invasion
- A. Parthenium
  - B. Stellar's Sea Cow
  - C. Catfish
  - D. Lantana
35. In rivet popper hypothesis rivet depict as
- A. Ecosystem
  - B. Extinct Species
  - C. Species
  - D. Plants
36. The term taxon is used for
- A. The ranks of species and genus
  - B. The rank up to phylum
  - C. The species epithet only
  - D. Only rank of taxonomic hierarchy

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37. Contagium vivum fluidum was proposed by

- A. D.J. Ivanowsky
- B. M.W. Beijerinck
- C. Stanley
- D. Robert Hooke

38. Which one is an incorrectly matched pair

- A. Phycomycetes – Mucor. Albugo
- B. Ascomycetes – Penicillium. Aspergillus
- C. Basidiomycetes – Puccinia. Agaricus
- D. Deuteromycetes – Ustilago. colletorichium

39. Match column I with Column II

	Column I		Column II
A	Food	i	Brown algae
B	Agar	ii	Porphyra. Laminaria
C	Algin	iii	Gelidium. Gracilaria
D	Carrageen	iv	Red algae

- |    |     |     |    |    |
|----|-----|-----|----|----|
|    | A   | B   | C  | D  |
| A. | ii  | iii | i  | iv |
| B. | ii  | iii | iv | i  |
| C. | iii | ii  | iv | i  |
| D. | iii | ii  | i  | iv |

40. Match column I with II and select the correct option

	Column I		Column II
A	Choanocytes	i	Platyhelminthes
B	Cnidoblasts	ii	Ctenophora
C	Flame cells	iii	Porifera
D	Nephridia	iv	Cnidenterata
e	Comb plates	v	Annelida

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	a	b	c	d	e
A.	ii	I	iv	v	iii
B.	ii	iv	i	v	iii
C.	v	i	iii	ii	iv
D.	iii	iv	I	v	ii

41. Which of the following is incorrectly matched
- A. Tree frog – Hyla
  - B. Garden lizard – Hemidactylus
  - C. Fighting fish – Betta
  - D. Tree Lizard – Chameleon
42. In \_\_\_\_\_ phyllotaxy a pair of leaves arise at each node and lie opposite to each other as in \_\_\_\_\_ plant
- A. Alternate – Hibiscus
  - B. Opposite – Hibiscus
  - C. Opposite – Calotropis
  - D. Whorled – Calotropis
43. Persistent calyx is the characteristic features of plants belonging to family
- A. Solanaceae
  - B. Liliaceae
  - C. Fabaceae
  - D. Papilionaceae
44. Polyarch vascular bundles generally occur in
- A. Monocot stem
  - B. Dicot Stem
  - C. Dicot root
  - D. Monocot root
45. Stamata are distributed more on the lower surface than on the upper surface in
- A. Monocotyledonous leaf
  - B. Dorsiventral leaf
  - C. Isobilateral leaf
  - D. Both A and B

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46. Frogs heart is
- A. Myogenic and 3 chambered
  - B. Myogenic and 2 chambered
  - C. Neurogenic and 3 chambered
  - D. Neurogenic and 2 chambered
47. Mesosomes are the infoldings of cell membrane which
- i) Are present in both prokaryotic and eukaryotic cells
  - ii) help in cell wall formation. DNA replication and respiration
  - iii) Increase the surface area of plasma membrane
- A. I and ii
  - B. ii and iii
  - C. I and iii
  - D. I, ii and iii
48. Which organelle is not a part of the endomembrane system
- A. Endoplasmic reticulum
  - B. Golgi complex
  - C. Lysosomes
  - D. Mitochondria
49. Select the mismatched pair
- A. Insulin – Fructose
  - B. Cellulase – Heteropolymer
  - C. Starch – Helical secondary structure
  - D. Chitin – Complex polysaccharide
50. Zygotene of prophase -1 is characterised by
- A. Chromomeres
  - B. Synaptonemal complex
  - C. Crossing Over
  - D. Terminalisation of chiasmata
51. How many ATP and NADPH molecules are respectively required to make one molecule of glucose through calvin cycle
- A. 3 and 2 respectively
  - B. 9 and 6 respectively

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- C. 18 and 12 respectively  
D. 12 and 18 respectively
52. Refer the given equation  $2C_{51}H_{98}O_6 + 145O_2 \rightarrow 102CO_2 + 98H_2O + \text{Energy}$  the RQ in this case is  
A. 1  
B. 0.7  
C. 1.45  
D. 1.62
53. Bolting i.e internode elongation just prior to flowering in beet, cabbage and many rosette plants is promoted by  
A. Auxin  
B. Gibberellin  
C. Cytokinin  
D. Ethylene
54. Which of the following are not the effect of the parathyroid hormone  
a) Stimulate the process of bone resorption.  
b) Decrease  $Ca^{2+}$  level in blood.  
c) Reabsorption of  $Ca^{2+}$  by renal tubule  
d) Decrease the absorption of  $Ca^{2+}$  from digested food.  
e) Increase metabolism of Carbohydrate  
A. a and c only      C. a and e only  
B. b, d and e only      D. b and c only
55. Select the incorrect statement regarding synapses  
A. The membrane of Presynaptic and post synaptic neuron are in close proximity in an electric synapse  
B. Electric current can flow directly from one neuron into the other across the electric synapse  
C. Chemical synapses use neurotransmitters  
D. Impulse transmission across a chemical synapse is always faster than that across an electrical synapse
56. Knee joints and elbow joints are examples of  
A. Saddle joint  
B. Ball and Socket joint  
C. Pivot joint  
D. Hinge joint

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57. Which one of the following statements is incorrect

- A. Birds and land snails are uricotelic animals
- B. Mammals and Frogs are ureotelic animals
- C. Aquatic Amphibious and aquatic insects are ammonotelic animals
- D. Birds and reptiles are ureotelic

58. Given below are two statements

Statement-1 – The coagulum is formed of network of threads called thrombins

Statement -2 – Spleen is the graveyard of erythrocytes in the light of the above statement.

Choose the most appropriate answer from the option given below.

- A. Both Statement I and Statement II are correct
- B. Both Statement I and Statement II are incorrect
- C. Statement I is correct, but Statement II is incorrect
- D. Statement I is incorrect, but Statement II is correct

59. CO<sub>2</sub> dissociates from carbaminohemoglobin when

- A. Pco<sub>2</sub> is high and Po<sub>2</sub> is low
- B. Po<sub>2</sub> is high and Pco<sub>2</sub> is low
- C. Pco<sub>2</sub> and Po<sub>2</sub> are equal
- D. None of the above

60. Which of the blood group is a universal recipient in blood transfusion

- A. Group AB
- B. Group B
- C. Group A
- D. Group O