



1. **Biological Species Concept (BSC) was given by:**
  - a) T. Dobzhansky
  - b) E. Mayr
  - c) S. Wright
  - d) G. Mendel
2. **Historically the first evidence of Natural Selection is noted as:**
  - a) Industrial melanism
  - b) Batesian mimicry
  - c) Sewall Wright effect
  - d) Mullerian mimicry
3. **Polyploidy plays a fundamental role in \_\_\_\_\_ speciation:**
  - a) Peripatric
  - b) Parapatric
  - c) Allopatric
  - d) Sympatric
4. **Protection from Malaria in people having sickle cell anaemia is an example of:**
  - a) Homozygote advantage
  - b) Homozygote disadvantage
  - c) Heterozygote advantage
  - d) Heterozygote disadvantage
5. **Which evolutionary process leads to adaptation?**
  - a) Genetic drift
  - b) Mutation
  - c) Natural selection
  - d) Migration
6. **Two species will be recognised as sibling species if:**
  - a) They look similar and can interbreed
  - b) They look dissimilar and can interbreed
  - c) They look similar and can't interbreed
  - d) They look dissimilar and can't interbreed
7. **Reproductive isolation is the hallmark of:**
  - a) Biological species concept
  - b) Morphological species concept
  - c) Ecological species concept
  - d) Evolutionary species concept
8. **Devonian period of Geological Time is referred to as:**
  - a) Age of Reptiles
  - b) Age of Fishes
  - c) Age of Amphibians
  - d) Age of Mammals
9. **In which mass extinction Dinosaurs supposedly got extinct as a result of asteroid impact on earth?**
  - a) K/T mass extinction
  - b) Late Permian
  - c) Late Devonian
  - d) Late Ordovician
10. **A Clade refers to a:**
  - a) Paraphyletic group
  - b) Polyphyletic group
  - c) Monophyletic group
  - d) None of these
11. **Antibiotic resistance in bacteria is an example of:**
  - a) Disruptive selection
  - b) Directional selection
  - c) Stabilizing selection
  - d) None of the above
12. **What constitutes the direct evidence of evolution?**
  - a) Homology
  - b) Analogy
  - c) Embryology
  - d) Fossil
13. **Increase in cranial capacity is an evolutionary trend observed in:**
  - a) Horse evolution
  - b) Human evolution
  - c) Amphibian evolution
  - d) Avian evolution
14. **Host-Parasite relationship signifies:**
  - a) Parallel evolution
  - b) Convergent evolution
  - c) Co-evolution
  - d) Divergent evolution
15. **Evolutionary theory "Punctuated equilibrium" indicating evolution in some fossil lineages interrupted by little change was given by:**
  - a) R.A. Fisher
  - b) Stephen Jay Gould
  - c) Hugo De Vries
  - d) Von Baer
16. **The Apple maggot fly, *Rhagoletis pomonella* through habitat differentiation has undergone:**
  - a) Allopatric speciation
  - b) Sympatric speciation
  - c) Parapatric speciation
  - d) None of the above
17. **Allopatric speciation caused by geographical barrier results in:**
  - a) Pre-zygotic incompatibility
  - b) Post-zygotic incompatibility
  - c) Both pre-zygotic and post zygotic incompatibility
  - d) All of the above
18. **Which of the following is known as Age of Reptiles:**
  - a) Coenozoic era
  - b) Mesozoic era
  - c) Proterozoic era
  - d) Paleozoic era

**Answers:**

- |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 1. b  | 2. a  | 3. d  | 4. c  | 5. c  | 6. c  | 7. a  |
| 8. b  | 9. a  | 10. c | 11. b | 12. d | 13. b | 14. c |
| 15. b | 16. b | 17. d | 18. b |       |       |       |

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# MICROBIOLOGY

Nishu Mittal & Dhananjay Singh

- In Gram's staining, which bacterium gives purple colour?**
  - Staphylococcus
  - E. coli*
  - Streptococcus
  - Both a & c
- Which of the following is used as a counterstain in Gram's staining?**
  - Crystal violet
  - Methylene blue
  - Safranin
  - Iodine
- Ames test is used to check:**
  - Mutation
  - Recombination
  - Salmonella infection
  - Fungal infection
- Presence of *E. coli* in water indicates:**
  - Sewage water contamination
  - Fecal contamination
  - Oil spillage
  - Both a & b
- How much percentage of ethanol is suitable for sterilization purpose?**
  - 100%
  - 70%
  - 90%
  - 50%
- Acid fast staining is used for identification of which bacteria?**
  - Mycobacteria
  - Acetobacteria
  - Heterobacteria
  - All of the above
- Acid fast staining is also called:**
  - Ziehl-Neelsen stain
  - Schaeffer-Fulton stain
  - Moeller stain
  - Gram's stain
- Schaeffer-Fulton staining is used for staining of:**
  - Spores
  - Cell wall
  - Nucleus
  - Plasma membrane
- Sanger's DNA sequencing method is based on:**
  - Alkylating agents
  - Dideoxynucleotide chain termination
  - Autoradiography
  - None of the above
- In laminar air flow hood, which filters are used for sterilisation of air?**
  - HEPA filters
  - Micro filters
  - Nano filters
  - None of the above
- Which of the following chemical is used for the inactivation of Ethidium Bromide?**
  - Sodium chloride
  - Sodium hypochlorite
  - Sodium dodecyl sulfate
  - Ethanol
- Ethanol is generally used for sterilisation because it causes \_\_\_\_\_ in microorganisms.**
  - Dehydration
  - Osmosis
  - Blabbing
  - Nucleus fragmentation
- The Bt gene of *Bacillus thuringiensis*, used in BT cotton, produces:**
  - Insecticidal protein
  - Nematodal protein
  - Fungicidal protein
  - All of these
- Autoclave used for sterilisation in laboratory works at:**
  - Temp. 121° C & 14 psi
  - Temp. 121° C & 15 psi
  - Temp. 120° C & 14 psi
  - Temp. 120° C & 15 psi
- Fungus *Trichoderma* is used for a variety of industrial purposes, like producing stone washed denim, because:**
  - It produces cellulase
  - It contains cellulose
  - It contains chitin
  - It produces blue colour
- Which of the following antibiotic(s) inhibits protein synthesis?**
  - Tetracycline
  - Chloramphenicol
  - Erythromycin
  - All of the above
- Bacterial cell wall is made up of:**
  - Peptidoglycans
  - Chitin
  - Cellulose
  - Lipopolysaccharides
- Lichens are the association in between:**
  - Microbes & Plants
  - Mycobiont & Plant root
  - Phycobiont & Animals
  - Mycobiont & Phycobiont

## Answers:

- |       |       |       |       |       |       |      |
|-------|-------|-------|-------|-------|-------|------|
| 1. d  | 2. c  | 3. a  | 4. d  | 5. b  | 6. a  | 7. a |
| 8. a  | 9. b  | 10. a | 11. b | 12. a | 13. a |      |
| 14. b | 15. a | 16. d | 17. a | 18. d |       |      |

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