



Symbiotic Relationship



Aveek Samanta & Somnath Bera

- Insect-bacteria symbiosis is found in:**
 - Vibrio cholerae* and Aphids
 - Buchnera aphidicola* and Aphids
 - Escherichia coli* and Aphids
 - Salmonella typhi* and Aphids
- Which one of the following is an example of protozoa-bacteria symbiosis?**
 - Pelomyxa* and Sulfur bacteria
 - Rhizopoda* and Blue-green algae
 - Mycetozoa* and *Spirochaetes*
 - Pelomyxa* and Methanogenic bacteria
- Fungal-bacterial endosymbiosis shows mutualistic relationship between a fungus and intracellular bacterial species residing within the fungus. The bacterium is:**
 - Pseudomonas sp.*
 - Rhizobium sp.*
 - Nocardia sp.*
 - Clostridium sp.*
- Symbiotic relationship between fish and bacteria can be found in:**
 - Gold fish with Purple non-sulfur bacteria
 - Guppy fish and Sulfur bacteria
 - Common carp with Bioluminescent bacteria
 - Anglerfish and Bioluminescent bacteria
- The bacterium present in human intestine that helps in producing vitamins:**
 - Escherichia coli*
 - Lactobacillus acidophilus*
 - Mycobacterium tuberculosis*
 - Clostridium tetani*
- In a mutualistic relationship between single celled marine microalga and a bacterium *Rosebacter*, the bacterium interactions with alga play a role in nutrient exchange. The name of the alga is:**
 - Chlamydomonas media*
 - Emiliania huxleyi*
 - Oedogonium aster*
 - Spirogyra adnata*
- In case of hornwort (*Dendroceros crispatus*), a type of algae is present in the dots on the thallus showing a mutualistic relationship. The name of the alga is:**
 - Nostoc sp.*
 - Oscillatoria sp.*
 - Anabaena sp.*
 - Gloeocapsa sp.*
- The pteridophyte which depends on the alga *Anabaena*, present in the leaf of the pteridophyte, for the fixation of nitrogen is:**
 - Selaginella sp.*
 - Lycopodium sp.*
 - Azolla sp.*
 - Pteris sp.*
- The plants engage in symbiosis with bacteria called *Rhizobia* that fix nitrogen from the atmosphere making it available to the plants. The type of plant family engaged in this association is:**
 - Rosaceae
 - Magnoliaceae
 - Asteraceae
 - Leguminaceae
- Coral is an example of symbiosis between:**
 - Symbiodinium* and Marine vertebrates
 - Fungi and Marine vertebrates
 - Bacteria and Vertebrates
 - Symbiodinium* and Marine invertebrates
- Lichen is a symbiosis between algae and fungi. An example of lichen is:**
 - Cytococcus sp.*
 - Puccinia sp.*
 - Ulothrix sp.*
 - Chlorella sp.*
- The 'Coralloid roots' have a symbiotic relationship with blue-green algae. In which plant species coralloid roots are found?**
 - Pinus sp.*
 - Cycas sp.*
 - Ginkgo sp.*
 - Gnetum sp.*
- Mycorrhiza is an example of mutualistic relationship found in roots of angiosperms that symbioses with:**
 - Algae
 - Bacteria
 - Fungi
 - Bryophyte
- Ant-fungus mutualism can be found in certain ant and fungal species which are dependent on each other for survival. A well known example of this symbiosis is:**
 - Leaf cutter ant
 - Fire ant
 - Bullet ant
 - Carpenter ant

Answers

1)b	2)d	3)c	4)d	5)a	6)b	7)a
8)c	9)d	10)d	11)a	12)b	13)c	14)a

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Radio Quiz

Sonam Choudhary

- The existence of radio waves was predicted in the 1860s by the Scottish theoretical physicist _____.**
a) Alexander Graham Bell b) Thomas Edison
c) Guglielmo Marconi d) James Clark Maxwell
- The famous Indian scientist, regarded as the 'unsung hero of radio communication', who first demonstrated wireless radio transmission:**
a) C. V. Raman b) J. C. Bose
c) H. J. Bhabha d) S. N. Bose
- Who sent the first ever radio transmission across the Atlantic Ocean?**
a) Nikola Tesla b) Mahlon Loomis
c) Guglielmo Marconi d) Heinrich Hertz
- This radio pioneer is acknowledged as the inventor of Frequency Modulation (FM).**
a) David Sarnoff
b) Edwin Howard Armstrong
c) Lee DeForest
d) Guglielmo Marconi
- The inventor of space telegraphy, Audion and triode amplifier, also the first person to use the term 'Radio' was:**
a) Lee de Forest b) Nikola Tesla
c) Nathan Stufflefield d) Mahlon Loomis
- If frequency of modulated wave is less than the frequency of carrier wave, then input signal is:**
a) Infinite b) Zero
c) Positive d) Negative
- Which of the following receivers does not have amplitude limiter stage?**
a) Amplitude Modulation b) Frequency Modulation
c) Both a & b d) None of these
- In radio transmission, Frequency Modulation (FM) is advantageous than Amplitude Modulation (AM) because it has:**
a) Less signal-to-noise ratio b) Constant amplitude
c) Less radiated power d) All of the above
- The disadvantage of FM over AM is that:**
a) Large bandwidth is required
b) High output power is needed
c) High modulating power is needed
d) Noise is very high for high frequency
- In _____ radio technology, an electronic waveform represents the sound on a carrier wave.**
a) Digital b) Satellite
c) Analog d) HD
- What is the frequency range of radio waves in the Electromagnetic radiation spectrum?**
a) 300 GHz – 300 MHz b) 300 GHz – 3 Hz
c) 30 EHz – 30 PHz d) 300 THz – 300 GHz
- In radio receiver, the maximum contribution to noise is from:**
a) Power amplifier
b) Power supply
c) Mixer stage
d) Equally from all of these
- Guglielmo Marconi and Karl Ferdinand Braun were awarded Nobel Prize in Physics _____ in recognition of their contributions to the development of wireless telegraph.**
a) 1902 b) 1905
c) 1907 d) 1909
- The World Radio Day is observed every year on which date?**
a) February 12 b) February 13
c) February 14 d) February 15
- What is the theme of the World Radio Day - 2018?**
a) Radio and Sports
b) Youth and Radio
c) Radio is You
d) Radio in Times of Emergency and Disaster

Answers

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

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