

Topic:- MICRO MSC S2

1) The virus which was used in the Hershey-Chase experiment to prove that DNA is the genetic material, belong to the genus:

[Question ID = 3392]

1. T1 virus [Option ID = 13562]
2. T2 virus [Option ID = 13563]
3. T3 virus [Option ID = 13564]
4. T4 virus [Option ID = 13565]

Correct Answer :-

- T4 virus [Option ID = 13565]

2) High partition coefficient during the liquid-liquid extraction process for product recovery implicates:

[Question ID = 3393]

1. Difficulty in the extraction process [Option ID = 13566]
2. Higher product degradation [Option ID = 13567]
3. No effect on the extraction process [Option ID = 13568]
4. Ease of extraction [Option ID = 13569]

Correct Answer :-

- Ease of extraction [Option ID = 13569]

3) Numerical aperture of an oil immersion objective lens is around:

[Question ID = 3394]

1. 0.65 [Option ID = 13570]
2. 0.85 [Option ID = 13571]
3. 1.33 [Option ID = 13572]
4. 1.03 [Option ID = 13573]

Correct Answer :-

- 1.33 [Option ID = 13572]

4) Which one of the following statements is incorrect?

[Question ID = 3395]

1. RNA polymerase III uses internal promoters located within the transcription unit [Option ID = 13574]
2. RNA polymerase II synthesizes mRNAs [Option ID = 13575]
3. RNA polymerase I synthesizes tRNAs [Option ID = 13576]
4. RNA polymerase III synthesizes small RNAs [Option ID = 13577]

Correct Answer :-

- RNA polymerase I synthesizes tRNAs [Option ID = 13576]

5) An icosahedron structure of virus particle is made of:

[Question ID = 3396]

1. 20 vertices, 12 edges, 30 faces [Option ID = 13578]
2. 20 edges, 12 faces, 30 vertices [Option ID = 13579]
3. 20 faces, 12 vertices, 30 edges [Option ID = 13580]
4. 20 vertices, 12 faces, 30 edges [Option ID = 13581]

Correct Answer :-

- 20 faces, 12 vertices, 30 edges [Option ID = 13580]

6) A nucleotide consists of a nitrogenous base linked to a sugar-phosphate. The nitrogenous base is either a purine or a pyrimidine. Which of the following combinations are pyrimidines?

[Question ID = 3397]

1. Thymine and adenine [Option ID = 13582]
2. Cytosine and guanine [Option ID = 13583]
3. Guanine and adenine [Option ID = 13584]
4. Cytosine and uracil [Option ID = 13585]

Correct Answer :-

- Cytosine and uracil [Option ID = 13585]

7) Which of the following enzymes is generally used in the preparation of High-Fructose syrup?

[Question ID = 3398]

1. Glucose oxidase [Option ID = 13586]
2. Glucose isomerase [Option ID = 13587]

<p>3. Glucose dehydrogenase [Option ID = 13588]</p> <p>4. Aldose reductase [Option ID = 13589]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Glucose isomerase [Option ID = 13587]</li> </ul>	<a href="https://pathfinderacademy.in/">https://pathfinderacademy.in/</a>
<p><b>8) Cyclization of glucose results in a:</b> [Question ID = 3399]</p> <p>1. Furanose ring [Option ID = 13590]</p> <p>2. Pyranose ring [Option ID = 13591]</p> <p>3. Glycosyl ring [Option ID = 13592]</p> <p>4. Glycone ring [Option ID = 13593]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Pyranose ring [Option ID = 13591]</li> </ul>	
<p><b>9) During assembly of a Poliovirus particle, twelve of the 14 S complexes assemble together to form:</b> [Question ID = 3400]</p> <p>1. an empty 73 S capsid [Option ID = 13594]</p> <p>2. an empty 125 S capsid [Option ID = 13595]</p> <p>3. 73 S capsid packaged with positive ssRNA genome inside it [Option ID = 13596]</p> <p>4. 125 S capsid packaged with negative ssRNA genome inside it [Option ID = 13597]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>an empty 73 S capsid [Option ID = 13594]</li> </ul>	
<p><b>10) Resolving power of a microscope is a function of:</b> [Question ID = 3401]</p> <p>1. Only wavelength of light used [Option ID = 13598]</p> <p>2. Only numerical aperture of lens system [Option ID = 13599]</p> <p>3. Refractive index [Option ID = 13600]</p> <p>4. Wavelength of light used and numerical aperture of lens system [Option ID = 13601]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Wavelength of light used and numerical aperture of lens system [Option ID = 13601]</li> </ul>	
<p><b>11) Which of the following is not an industrial by-product?</b> [Question ID = 3402]</p> <p>1. Sulfite waste liquor [Option ID = 13602]</p> <p>2. Corn steep liquor [Option ID = 13603]</p> <p>3. Molasses [Option ID = 13604]</p> <p>4. Yeast hydrolysate [Option ID = 13605]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Yeast hydrolysate [Option ID = 13605]</li> </ul>	
<p><b>12) A male genetic disorder caused by the presence of one or more extra X chromosomes is:</b> [Question ID = 3403]</p> <p>1. Huntington's disease [Option ID = 13606]</p> <p>2. Klinefelter syndrome [Option ID = 13607]</p> <p>3. Creutzfeldt-Jakob disease [Option ID = 13608]</p> <p>4. Alzheimer's disease [Option ID = 13609]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Klinefelter syndrome [Option ID = 13607]</li> </ul>	
<p><b>13) Which one of these enzymes is not packaged inside a retrovirus particle?</b> [Question ID = 3404]</p> <p>1. RNA dependent DNA polymerase [Option ID = 13610]</p> <p>2. Integrase [Option ID = 13611]</p> <p>3. Protease [Option ID = 13612]</p> <p>4. Glycosylase [Option ID = 13613]</p>	
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Glycosylase [Option ID = 13613]</li> </ul>	
<p><b>14) Who was awarded Nobel Prize for the discovery of streptomycin?</b> [Question ID = 3405]</p> <p>1. Selman A. Waksman [Option ID = 13614]</p> <p>2. Paul Ehrlich [Option ID = 13615]</p> <p>3. Elie Metchnikoff [Option ID = 13616]</p> <p>4. Sergei N. Winogradsky [Option ID = 13617]</p>	<a href="https://pathfinderacademy.in/">https://pathfinderacademy.in/</a>
<p><b>Correct Answer :-</b></p> <ul style="list-style-type: none"> <li>Selman A. Waksman [Option ID = 13614]</li> </ul>	

15) Which of the following groups of microorganisms contribute maximally to global antibiotic production?

[Question ID = 3406]

1. Firmicutes [Option ID = 13618]
2. Proteobacteria [Option ID = 13619]
3. Halobacteria [Option ID = 13620]
4. Actinobacteria [Option ID = 13621]

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Correct Answer :-

- Actinobacteria [Option ID = 13621]

16) Representatives of most major families of DNA viruses are associated with cancer, except:

[Question ID = 3407]

1. Poxviruses [Option ID = 13622]
2. Adenoviruses [Option ID = 13623]
3. Herpesviruses [Option ID = 13624]
4. Polyomaviruses [Option ID = 13625]

Correct Answer :-

- Poxviruses [Option ID = 13622]

17) Which of the following could be the reason for no expression of eukaryotic recombinant protein using an expression vector in *E.coli*?

[Question ID = 3408]

1. Addition of inducing agent  
[Option ID = 13626]
2. Growth of bacterial culture in presence of the antibiotic used to select for the recombinant plasmid  
[Option ID = 13627]
3. Codon bias  
[Option ID = 13628]
4. Eukaryotic proteins cannot ever be expressed in bacteria  
[Option ID = 13629]

Correct Answer :-

- Codon bias

[Option ID = 13628]

18) The region in which bacteriochlorophyll can absorb light is:

[Question ID = 3409]

1. ultraviolet region [Option ID = 13630]
2. infrared region [Option ID = 13631]
3. visible region [Option ID = 13632]
4. short wavelength of visible range [Option ID = 13633]

Correct Answer :-

- infrared region [Option ID = 13631]

19) Ribavirin has been used in aerosol form to treat infants hospitalized with:

[Question ID = 3410]

1. Lassa fever [Option ID = 13634]
2. Respiratory syncytial virus infection [Option ID = 13635]
3. Bunyavirus infection [Option ID = 13636]
4. Hepatitis C virus infection [Option ID = 13637]

Correct Answer :-

- Respiratory syncytial virus infection [Option ID = 13635]

20) Introduction of oxygen into fermenting yeast leads to the cessation of ethanol fermentation, which is known as:

[Question ID = 3411]

1. Harden-Young effect [Option ID = 13638]
2. Pasteur effect [Option ID = 13639]
3. Crabtree effect [Option ID = 13640]
4. Winogradsky effect [Option ID = 13641]

Correct Answer :-

- Pasteur effect [Option ID = 13639]

21) Thermolabile biological material cannot be extracted from fermentation broth by use of which of the following techniques?

[Question ID = 3412]

1. Lyophilization [Option ID = 13642]

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2. Sublimation [Option ID = 13643]
3. Spray drying [Option ID = 13644]
4. Solvent-Solvent extraction [Option ID = 13645]

Correct Answer :-

- Sublimation [Option ID = 13643]

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**22) The alpha-helix configuration found in proteins has:**  
[Question ID = 3413]

1. 3.4 amino acids per turn [Option ID = 13646]
2. 2 amino acids per turn [Option ID = 13647]
3. 4 amino acids per turn [Option ID = 13648]
4. 3.6 amino acids per turn [Option ID = 13649]

Correct Answer :-

- 3.6 amino acids per turn [Option ID = 13649]

**23) Traditionally Koumiss is made from the milk of which of the following animals?**  
[Question ID = 3414]

1. Mare [Option ID = 13650]
2. Cow [Option ID = 13651]
3. Buffalo [Option ID = 13652]
4. Goat [Option ID = 13653]

Correct Answer :-

- Mare [Option ID = 13650]

**24) In which of the following cases can a vaccine be used post-exposure to the virus?**  
[Question ID = 3415]

1. Hepatitis C virus [Option ID = 13654]
2. Rabies virus [Option ID = 13655]
3. Epstein Barr Virus [Option ID = 13656]
4. Poliovirus [Option ID = 13657]

Correct Answer :-

- Rabies virus [Option ID = 13655]

**25) Which of the following combinations regulate gene expression?**  
[Question ID = 3416]

1. Promoter strength and DNA polymerase activity [Option ID = 13658]
2. Origin strength and DNA helicase activity [Option ID = 13659]
3. Histone acetylation and replisome stability [Option ID = 13660]
4. DNA methylation and mRNA stability [Option ID = 13661]

Correct Answer :-

- DNA methylation and mRNA stability [Option ID = 13661]

**26) Which of the following microorganisms are used in yogurt preparation (1:1 ratio)?**

[Question ID = 3417]

1. *Lactobacillus delbrueckii* and *Streptococcus thermophilus*  
[Option ID = 13662]
2. *Streptococcus thermophilus* and *Lactobacillus lactis*  
[Option ID = 13663]
3. *Lactobacillus delbrueckii* and *Lactobacillus casei*  
[Option ID = 13664]
4. *Lactobacillus delbrueckii* and *Lactobacillus lactis*  
[Option ID = 13665]

Correct Answer :-

- *Lactobacillus delbrueckii* and *Streptococcus thermophilus*  
[Option ID = 13662]

**27) In 1952, this scientist published a paper that established the plaque assay as a means of counting viable animal viruses:**  
[Question ID = 3418]

1. John Enders [Option ID = 13666]
2. Frederick Robbins [Option ID = 13667]
3. Renato Dulbecco [Option ID = 13668]
4. James Watson [Option ID = 13669]

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Correct Answer :-

- Renato Dulbecco [Option ID = 13668]

**28) In specialized transduction using lambda phage:**

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**[Question ID = 3419]**

1. Only the *gal* or *bio* regions can get transduced  
[Option ID = 13670]
2. Any region of the host can be transduced  
[Option ID = 13671]
3. The transducing particle is able to propagate itself subsequently  
[Option ID = 13672]
4. The transducing particle carries only host DNA  
[Option ID = 13673]

**Correct Answer :-**

- Only the *gal* or *bio* regions can get transduced  
[Option ID = 13670]

**29) Anoxygenic bacterial photosynthesis uses the following as a chemical reductant:**

**[Question ID = 3420]**

1. oxygen [Option ID = 13674]
2. water [Option ID = 13675]
3. hydrogen sulphide [Option ID = 13676]
4. ammonia [Option ID = 13677]

**Correct Answer :-**

- hydrogen sulphide [Option ID = 13676]

**30) The concept of ‘gene rearrangement in antibody production’ was given by:**

**[Question ID = 3421]**

1. Cesar Milstein [Option ID = 13678]
2. Susumu Tonegawa [Option ID = 13679]
3. Gerald Edelman [Option ID = 13680]
4. Peter Doherty [Option ID = 13681]

**Correct Answer :-**

- Susumu Tonegawa [Option ID = 13679]

**31) Which of the following is an essential fatty acid?**

**[Question ID = 3422]**

1. Oleic Acid [Option ID = 13682]
2. Lauric Acid [Option ID = 13683]
3. Alpha - linolenic Acid [Option ID = 13684]
4. Palmitic Acid [Option ID = 13685]

**Correct Answer :-**

- Alpha - linolenic Acid [Option ID = 13684]

**32) During food preservation, sodium nitrate is an effective agent against which of the following microorganisms under acidic conditions?**

**[Question ID = 3423]**

1. Anaerobic microorganisms [Option ID = 13686]
2. Aerobic microorganisms [Option ID = 13687]
3. Acidophiles [Option ID = 13688]
4. Thermophiles [Option ID = 13689]

**Correct Answer :-**

- Anaerobic microorganisms [Option ID = 13686]

**33) In birds, the lymphoid organ which is the primary site of B-cell maturation is:**

**[Question ID = 3424]**

1. Bone marrow [Option ID = 13690]
2. Bursa of fabricius [Option ID = 13691]
3. Harderian gland [Option ID = 13692]
4. Germinal center [Option ID = 13693]

**Correct Answer :-**

- Bursa of fabricius [Option ID = 13691]

**34) Which of the following would you use to determine if a mutation in a DNA-binding protein results in loss of DNA-binding function?**

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**[Question ID = 3425]**

1. Mass spectrometry [Option ID = 13694]

2. SDS-PAGE [Option ID = 13695]
3. Southern blotting [Option ID = 13696]
4. Electrophoretic mobility shift assay [Option ID = 13697]

**Correct Answer :-**

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- Electrophoretic mobility shift assay [Option ID = 13697]

**35) In general, the substances with molecular mass lower than this are poorly immunogenic**

**[Question ID = 3426]**

1. 80-100 kDa [Option ID = 13698]
2. 30-50 kDa [Option ID = 13699]
3. 5-10 kDa [Option ID = 13700]
4. 1 kDa [Option ID = 13701]

**Correct Answer :-**

- 5-10 kDa [Option ID = 13700]

**36) A competitive inhibitor of an enzyme:**

**[Question ID = 3427]**

1. decreases  $K_m$  without affecting  $V_{max}$  [Option ID = 13702]
2. decreases  $V_{max}$  without affecting  $K_m$  [Option ID = 13703]
3. increases  $V_{max}$  without affecting  $K_m$  [Option ID = 13704]
4. increases  $K_m$  without affecting  $V_{max}$  [Option ID = 13705]

**Correct Answer :-**

- increases  $K_m$  without affecting  $V_{max}$  [Option ID = 13705]

**37) The monoclonal antibodies that catalyze reactions are:**

**[Question ID = 3428]**

1. Single chain antibodies [Option ID = 13706]
2. Single domain antibodies [Option ID = 13707]
3. Nanobodies [Option ID = 13708]
4. Abzymes [Option ID = 13709]

**Correct Answer :-**

- Abzymes [Option ID = 13709]

**38) When radiolabelling DNA to make probes for Southern blotting you would use:**

**[Question ID = 3429]**

1. RNA polymerase I [Option ID = 13710]
2. DNA polymerase I [Option ID = 13711]
3. Mung bean nuclease [Option ID = 13712]
4. Exonuclease III [Option ID = 13713]

**Correct Answer :-**

- DNA polymerase I [Option ID = 13711]

**39) *Chlorobium* belongs to the following group of photosynthetic bacteria:**

**[Question ID = 3430]**

1. Purple sulphur bacteria  
[Option ID = 13714]
2. Green sulphur bacteria  
[Option ID = 13715]
3. Purple non-sulphur bacteria  
[Option ID = 13716]
4. Green non-sulphur bacteria  
[Option ID = 13717]

**Correct Answer :-**

- Green sulphur bacteria  
[Option ID = 13715]

**40) Class III MHC genes encode:**

**[Question ID = 3431]**

1. Glycoproteins expressed primarily on antigen presenting cells [Option ID = 13718]
2. Glycoproteins expressed on surface of nearly all nucleated cells [Option ID = 13719]
3. Various secreted proteins that have immune functions like component of complement system [Option ID = 13720]
4. Proteins involved in mucosal immunity [Option ID = 13721]

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**Correct Answer :-**

- Various secreted proteins that have immune functions like component of complement system [Option ID = 13720]

41) Phytase enzyme helps in the solubilization of:

[Question ID = 3432]

1. Inorganic sulfur from phytic acid [Option ID = 13722]
2. Inorganic nitrogen from phytic acid [Option ID = 13723]
3. Inorganic phosphorus from phytic acid [Option ID = 13724]
4. Inorganic arsenic from phytic acid [Option ID = 13725]

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Correct Answer :-

- Inorganic phosphorus from phytic acid [Option ID = 13724]

42) The organisms which can use reduced inorganic compounds as electron donors are known as:

[Question ID = 3433]

1. chemotrophs [Option ID = 13726]
2. organotrophs [Option ID = 13727]
3. lithotrophs [Option ID = 13728]
4. phototrophs [Option ID = 13729]

Correct Answer :-

- lithotrophs [Option ID = 13728]

43) The complement system components that make 'membrane attack complex' are:

[Question ID = 3434]

1. C4b, C4c, C4d and C5a [Option ID = 13730]
2. C5, C6, C7, C8 and C9 [Option ID = 13731]
3. C5a, C6, C7, C8 and C9 [Option ID = 13732]
4. C5b, C6, C7, C8 and C9 [Option ID = 13733]

Correct Answer :-

- C5b, C6, C7, C8 and C9 [Option ID = 13733]

44) Rumen anaerobic fungi exist in relationship with \_\_\_\_\_ to increase the rate of cellulose breakdown in animals.

[Question ID = 3435]

1. Acetogens [Option ID = 13734]
2. Alkaliphiles [Option ID = 13735]
3. Acidophiles [Option ID = 13736]
4. Methanogens [Option ID = 13737]

Correct Answer :-

- Methanogens [Option ID = 13737]

45) Chediak-Higashi syndrome is a rare inherited disorder which is characterized by abnormal function of which type of cells of the immune system?

[Question ID = 3436]

1. B-cells [Option ID = 13738]
2. T-cells [Option ID = 13739]
3. Natural killer cells [Option ID = 13740]
4. Cytotoxic T cells [Option ID = 13741]

Correct Answer :-

- Natural killer cells [Option ID = 13740]

46) Which of the following is not essential for the survival and propagation of a eukaryotic chromosome?

[Question ID = 3437]

1. Origin [Option ID = 13742]
2. Centromere [Option ID = 13743]
3. Promoter [Option ID = 13744]
4. Telomere [Option ID = 13745]

Correct Answer :-

- Promoter [Option ID = 13744]

47) In respirometry, the evolution of labelled CO<sub>2</sub> from which carbon of glucose represents operation of Entner Doudoroff pathway?

[Question ID = 3438]

1. C1 and C2 [Option ID = 13746]
2. C2 and C5 [Option ID = 13747]
3. C1 and C4 [Option ID = 13748]
4. C3 and C4 [Option ID = 13749]

Correct Answer :-

- C1 and C4 [Option ID = 13748]

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48) The *Bacillus* sporulation cascade is controlled by:

[Question ID = 3439]

1. Alternative RNA polymerases

[Option ID = 13750]

2. Alternative sigma factors

[Option ID = 13751]

3. Antiterminators

[Option ID = 13752]

4. Transcriptional repressors

[Option ID = 13753]

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Correct Answer :-

- Alternative sigma factors

[Option ID = 13751]

49) The transfer of tissue between genetically different members of the same species is termed as:

[Question ID = 3440]

1. Autograft [Option ID = 13754]

2. Isograft [Option ID = 13755]

3. Allograft [Option ID = 13756]

4. Xenograft [Option ID = 13757]

Correct Answer :-

- Allograft [Option ID = 13756]

50) Under standard conditions, when all reactants and products are at 1 mol/L concentration, then:

[Question ID = 3441]

1.  $\Delta G = 0$  [Option ID = 13758]

2.  $\Delta G_o = 0$  [Option ID = 13759]

3.  $\Delta G = \Delta G_o$  [Option ID = 13760]

4.  $K_{eq} = 1$  [Option ID = 13761]

Correct Answer :-

- $\Delta G = \Delta G_o$  [Option ID = 13760]

51) If the doubling time of a microorganism is 40 minutes, what is its specific growth rate?

[Question ID = 3442]

1.  $40 \text{ min}^{-1}$  [Option ID = 13762]

2.  $46.2 \text{ min}^{-1}$  [Option ID = 13763]

3.  $1.0395 \text{ h}^{-1}$  [Option ID = 13764]

4.  $1.0895 \text{ h}^{-1}$  [Option ID = 13765]

Correct Answer :-

- $1.0395 \text{ h}^{-1}$  [Option ID = 13764]

52) Which of these is a cancer prevention vaccine approved for use in humans?

[Question ID = 3443]

1. Gardasil [Option ID = 13766]

2. Havrix [Option ID = 13767]

3. Menveo [Option ID = 13768]

4. Shingrix [Option ID = 13769]

Correct Answer :-

- Gardasil [Option ID = 13766]

53) An extracellular matrix fibrous protein found in basal laminae is:

[Question ID = 3444]

1. Fibronectin [Option ID = 13770]

2. Integrin [Option ID = 13771]

3. Entactin [Option ID = 13772]

4. Laminin [Option ID = 13773]

Correct Answer :-

- Laminin [Option ID = 13773]

54) One of the following is a continuous culture method:

[Question ID = 3445]

1. Chemostat [Option ID = 13774]

2. Hemostat [Option ID = 13775]

3. Coulter-Counter [Option ID = 13776]

4. Turbidostat [Option ID = 13777]

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Correct Answer :-



- Chemostat [Option ID = 13774]

55) Which one of these is part of the normal microflora of human skin?

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[Question ID = 3446]

1. *Staphylococcus aureus*  
[Option ID = 13778]
2. *Escherichia coli*  
[Option ID = 13779]
3. *Lactobacillus sp.*  
[Option ID = 13780]
4. *Haemophilus parainfluenzae*  
[Option ID = 13781]

Correct Answer :-

- *Staphylococcus aureus*  
[Option ID = 13778]

56) Brandy is made by distilling of:

[Question ID = 3447]

1. Beer [Option ID = 13782]
2. Wine [Option ID = 13783]
3. Rum [Option ID = 13784]
4. Whisky [Option ID = 13785]

Correct Answer :-

- Wine [Option ID = 13783]

57) In ELISA, incubating a plate with antigen or antibody is known as:

[Question ID = 3448]

1. Blocking [Option ID = 13786]
2. Coating [Option ID = 13787]
3. Sandwiching [Option ID = 13788]
4. Detection [Option ID = 13789]

Correct Answer :-

- Coating [Option ID = 13787]

58) Which of the following is not used in the preservation of food?

[Question ID = 3449]

1. Salt [Option ID = 13790]
2. Sugar [Option ID = 13791]
3. Organic Acids [Option ID = 13792]
4. Mineral Acids [Option ID = 13793]

Correct Answer :-

- Mineral Acids [Option ID = 13793]

59) The capsules of bacteria can act as virulence factors because they can:

[Question ID = 3450]

1. Interfere with antibody binding [Option ID = 13794]
2. Interfere with phagocytosis [Option ID = 13795]
3. Interfere with B cell activation [Option ID = 13796]
4. Interfere with activity of interferons [Option ID = 13797]

Correct Answer :-

- Interfere with phagocytosis [Option ID = 13795]

60) Which of the following statements is true?

[Question ID = 3451]

1. The Mu phage is a transposon [Option ID = 13798]
2. The lambda phage is a virulent phage [Option ID = 13799]
3. The T4 phage is a temperate phage [Option ID = 13800]
4. M13 is an icosahedral phage [Option ID = 13801]

Correct Answer :-

- The Mu phage is a transposon [Option ID = 13798]

61) Conversion of 1 mole of glucose to 2 mole lactate under anaerobic conditions results in:

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[Question ID = 3452]

1. Gain of 2 mole NADH and 2 mole of ATP [Option ID = 13802]
2. Generation of 2 mole ATP [Option ID = 13803]

3. Generation of 1 mole ATP [Option ID = 13804]
4. Gain of 2 mole of NADH [Option ID = 13805]

**Correct Answer :-**

- Generation of 2 mole ATP [Option ID = 13803]

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**62) For how long can anthrax spores survive in a dry soil?**

**[Question ID = 3453]**

1. 30-40 days [Option ID = 13806]
2. 6-7 months [Option ID = 13807]
3. 6-7 years [Option ID = 13808]
4. More than 50 years [Option ID = 13809]

**Correct Answer :-**

- More than 50 years [Option ID = 13809]

**63) Which of the following mutations would make the lac operon constitutive?**

**[Question ID = 3454]**

1. *lacO*  
[Option ID = 13810]
2. *lacI<sup>S</sup>*  
[Option ID = 13811]
3. *lacZ*  
[Option ID = 13812]
4. *lacY*  
[Option ID = 13813]

**Correct Answer :-**

- *lacO*

**64) Which of the following traits permits a bacterium to act as a donor during conjugation?**

**[Question ID = 3455]**

1. Presence of Col plasmid [Option ID = 13814]
2. Presence of R plasmid [Option ID = 13815]
3. Presence of F plasmid [Option ID = 13816]
4. Presence of 2 micron plasmid [Option ID = 13817]

**Correct Answer :-**

- Presence of F plasmid [Option ID = 13816]

**65) All of the following drugs are cell wall biosynthesis inhibitors, except:**

**[Question ID = 3456]**

1. Fosfomycin [Option ID = 13818]
2. Bacitracin [Option ID = 13819]
3. Gramicidin [Option ID = 13820]
4. Penicillin [Option ID = 13821]

**Correct Answer :-**

- Gramicidin [Option ID = 13820]

**66) NAG and NAM of peptidoglycan layer is linked by:**

**[Question ID = 3457]**

1. beta-(1,4) glycosidic linkage [Option ID = 13822]
2. alpha-(1,4) glycosidic linkage [Option ID = 13823]
3. alpha-(1,6) glycosidic linkage [Option ID = 13824]
4. beta-(1,6) glycosidic linkage [Option ID = 13825]

**Correct Answer :-**

- beta-(1,4) glycosidic linkage [Option ID = 13822]

**67) Polyphenol oxidases help in the degradation of:**

**[Question ID = 3458]**

1. Cellulose [Option ID = 13826]
2. Hemicellulose [Option ID = 13827]
3. Lignin [Option ID = 13828]
4. Lipid bilayer [Option ID = 13829]

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**Correct Answer :-**

- Lignin [Option ID = 13828]

68) Of those infected with Polio virus, what percentage of children show symptoms of infection?

[Question ID = 3459]

1. 10% [Option ID = 13830]
2. 50% [Option ID = 13831]
3. 90% [Option ID = 13832]
4. 100% [Option ID = 13833]

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Correct Answer :-

- 10% [Option ID = 13830]

69) Agrobacterium is able to facilitate transformation in plants because:

[Question ID = 3460]

1. Its Ti plasmid facilitates DNA transfer into the plant cell [Option ID = 13834]
2. The bacterium is able to enter into the plant and travel to the shoot tip [Option ID = 13835]
3. It triggers pollination [Option ID = 13836]
4. It feeds on the plant [Option ID = 13837]

Correct Answer :-

- Its Ti plasmid facilitates DNA transfer into the plant cell [Option ID = 13834]

70) Which one of the following represents a group of prokaryotes that lack cell wall?

[Question ID = 3461]

1. Gracilicutes [Option ID = 13838]
2. Firmicutes [Option ID = 13839]
3. Tenericutes [Option ID = 13840]
4. Mendosicutes [Option ID = 13841]

Correct Answer :-

- Tenericutes [Option ID = 13840]

71) Which of these is not a term for a form of leishmaniasis?

[Question ID = 3462]

1. Kala azar [Option ID = 13842]
2. Dumdum fever [Option ID = 13843]
3. Baghdad boil [Option ID = 13844]
4. Kali gham [Option ID = 13845]

Correct Answer :-

- Kali gham [Option ID = 13845]

72) Which of the following antibiotics inhibits peptidyl transferase activity?

[Question ID = 3463]

1. Cycloheximide [Option ID = 13846]
2. Kanamycin [Option ID = 13847]
3. Tetracycline [Option ID = 13848]
4. Paromomycin [Option ID = 13849]

Correct Answer :-

- Cycloheximide [Option ID = 13846]

73) A protein's size was found to be 150 kDa by gel filtration. When it was resolved on SDS-PAGE, two bands of equal intensity of sizes 50 kDa and 25 kDa were seen. Which of the following is the most likely conclusion you would draw?

[Question ID = 3464]

1. The protein was completely degraded during SDS-PAGE [Option ID = 13850]
2. The protein got aggregated during gel filtration [Option ID = 13851]
3. The protein is a heterodimer of two subunits of sizes 50 kDa and 25 kDa [Option ID = 13852]
4. The protein is a heterotetramer of two subunit types of sizes 50 kDa and 25 kDa. [Option ID = 13853]

Correct Answer :-

- The protein is a heterotetramer of two subunit types of sizes 50 kDa and 25 kDa. [Option ID = 13853]

74) Diauxic growth curve of E. coli on glucose- lactose broth is best explained as follows:

[Question ID = 3465]

1. *E.coli* uses glucose and lactose with different rates

[Option ID = 13854]

2. Utilization of complex sugar is delayed as it is under catabolite repression by glucose

[Option ID = 13855]

3. Growth pattern of bacterium always changes from sigmoidal to diauxic in presence of mixture of sugars

[Option ID = 13856]

4. One of the two sugars is used first before the second sugar is utilized

[Option ID = 13857]

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**Correct Answer :-**

- Utilization of complex sugar is delayed as it is under catabolite repression by glucose

[Option ID = 13855]

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**75) The enzyme that is responsible for the negative supercoiling of prokaryotic chromosomes is:**

**[Question ID = 3466]**

1. DNA topoisomerase I [Option ID = 13858]
2. DNA topoisomerase II [Option ID = 13859]
3. DNA gyrase [Option ID = 13860]
4. DNA B helicase [Option ID = 13861]

**Correct Answer :-**

- DNA gyrase [Option ID = 13860]

**76) Pisatin detoxification in pea plant by *Nectria hematococca* is due to the production of:**

**[Question ID = 3467]**

1. Pisatin demethylase

[Option ID = 13862]

2. Pisatin hydrolase

[Option ID = 13863]

3. Pisatin carboxylase

[Option ID = 13864]

4. Pisatin deaminase

[Option ID = 13865]

**Correct Answer :-**

- Pisatin demethylase

[Option ID = 13862]

**77) Which of the following is not a characteristic of histoplasmosis?**

**[Question ID = 3468]**

1. Person to person transmission [Option ID = 13866]
2. Specific geographic distribution [Option ID = 13867]
3. Yeasts in tissue [Option ID = 13868]
4. Mycelial phase in the soil [Option ID = 13869]

**Correct Answer :-**

- Person to person transmission [Option ID = 13866]

**78) The process of sequencing the human genome in short pieces and then assembling the pieces together into the whole genome sequence by overlapping reads is called:**

**[Question ID = 3469]**

1. Chromosome walking [Option ID = 13870]
2. Shotgun sequencing [Option ID = 13871]
3. Primer walking [Option ID = 13872]
4. Chromosome jumping [Option ID = 13873]

**Correct Answer :-**

- Shotgun sequencing [Option ID = 13871]

**79) Which one of the following processes does not generate ATP?**

**[Question ID = 3470]**

1. Oxidative phosphorylation [Option ID = 13874]
2. Calvin-Benson cycle [Option ID = 13875]
3. Photophosphorylation [Option ID = 13876]
4. Substrate-level phosphorylation [Option ID = 13877]

**Correct Answer :-**

- Calvin-Benson cycle [Option ID = 13875]

**80) Multi drug resistant (MDR) TB is caused by strains of *M. tuberculosis* that are resistant to:**

**[Question ID = 3471]**

1. Rifampicin or Isoniazid [Option ID = 13878]
2. Rifampicin and Isoniazid [Option ID = 13879]
3. Rifampicin, Isoniazid and at least one injectable agent [Option ID = 13880]
4. Rifampicin, Isoniazid and at least one of the fluoroquinolones [Option ID = 13881]

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**Correct Answer :-**

- Rifampicin and Isoniazid [Option ID = 13879]

81) In aquatic bodies hydrostatic pressure increases by 0.25 atm for every 10 m increase in depth. The hydrostatic pressure at 1000 m depth is expected to be:

[Question ID = 3472]

1. 24 atm [Option ID = 13882]
2. 25 atm [Option ID = 13883]
3. 26 atm [Option ID = 13884]
4. 27 atm [Option ID = 13885]

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Correct Answer :-

- 26 atm [Option ID = 13884]

82) Winogradsky column is often used for the isolation of:

[Question ID = 3473]

1. *Desulfovibrio spp.*  
[Option ID = 13886]
2. *Sulfolobus spp.*  
[Option ID = 13887]
3. *Escherichia spp.*  
[Option ID = 13888]
4. *Pyrolobus spp*  
[Option ID = 13889]

Correct Answer :-

- *Desulfovibrio spp.*  
[Option ID = 13886]

83) The regulation of bacterial operons by transcriptional termination events before the first structural gene of the operon is called:

[Question ID = 3474]

1. Catabolite repression [Option ID = 13890]
2. Stringent response [Option ID = 13891]
3. Attenuation [Option ID = 13892]
4. Induction [Option ID = 13893]

Correct Answer :-

- Attenuation [Option ID = 13892]

84) Teichoic acid present in cell wall of Gram-positive bacteria binds to  
[Question ID = 3475]

1. Ferrous ions [Option ID = 13894]
2. Phosphorus ions [Option ID = 13895]
3. Magnesium ions [Option ID = 13896]
4. Sulphur ions [Option ID = 13897]

Correct Answer :-

- Magnesium ions [Option ID = 13896]

85) Which of the following represents a washout condition in an ideal continuous stirred-tank reactor (CSTR)?

[Question ID = 3476]

1.  $\mu > D$  [Option ID = 13898]
2.  $\mu = D$  [Option ID = 13899]
3.  $\mu < D$  [Option ID = 13900]
4. There is no relation between  $\mu$  and  $D$  [Option ID = 13901]

Correct Answer :-

- $\mu < D$  [Option ID = 13900]

86) The cellular organelle with acid hydrolases within its lumen is:

[Question ID = 3477]

1. Mitochondrion [Option ID = 13902]
2. Lysosome [Option ID = 13903]
3. Peroxisome [Option ID = 13904]
4. Endoplasmic reticulum [Option ID = 13905]

Correct Answer :-

- Lysosome [Option ID = 13903]

87) Which amino acid forms the peptide inter-bridge between two peptidoglycan moieties in the cell wall of *Staphylococcus aureus*?

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[Question ID = 3478]

1. L- Glycine  
[Option ID = 13906]
2. L- Alanine  
[Option ID = 13907]
3. L- Serine  
[Option ID = 13908]
4. D- Lysine  
[Option ID = 13909]

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**Correct Answer :-**

- L- Glycine  
[Option ID = 13906]

**88) In the disease triangle, which of the following factors is not involved?**

[Question ID = 3479]

1. Susceptible host [Option ID = 13910]
2. Pathogen [Option ID = 13911]
3. Conducive environment [Option ID = 13912]
4. Duration of exposure time [Option ID = 13913]

**Correct Answer :-**

- Duration of exposure time [Option ID = 13913]

**89) The human cell has 23 pairs of chromosomes. After meiosis, the number of chromatids in the cell would be:**

[Question ID = 3480]

1. 72 [Option ID = 13914]
2. 23 [Option ID = 13915]
3. 92 [Option ID = 13916]
4. 46 [Option ID = 13917]

**Correct Answer :-**

- 46 [Option ID = 13917]

**90) Which of the following statements is most appropriate?**

[Question ID = 3481]

1. EMB agar is a differential medium only [Option ID = 13918]
2. MacConkey agar is both selective and differential medium [Option ID = 13919]
3. EMB agar is both selective and differential medium for Gram positive bacteria [Option ID = 13920]
4. MacConkey agar is a selective medium only [Option ID = 13921]

**Correct Answer :-**

- MacConkey agar is both selective and differential medium [Option ID = 13919]

**91) Polyetic pathogens are those pathogens which can:**

[Question ID = 3482]

1. Complete a life cycle in 15 days [Option ID = 13922]
2. Complete a life cycle in one month [Option ID = 13923]
3. Complete a life cycle in two months [Option ID = 13924]
4. Complete a life cycle in an entire year or more than a year [Option ID = 13925]

**Correct Answer :-**

- Complete a life cycle in an entire year or more than a year [Option ID = 13925]

**92) Which of the following statements is true with reference to Type I restriction enzymes?**

[Question ID = 3483]

1. Require only ATP for cleavage [Option ID = 13926]
2. Recognize bipartite sequences [Option ID = 13927]
3. Cleave DNA at their recognition site [Option ID = 13928]
4. Methylate DNA only at cytosine residues [Option ID = 13929]

**Correct Answer :-**

- Recognize bipartite sequences [Option ID = 13927]

**93) Which of the following is mismatched?**

[Question ID = 3484]

1. Facultative gram -ve rods : *E.coli*  
[Option ID = 13930]
2. TSI test negative : *Pseudomonas*  
[Option ID = 13931]

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3. Anaerobic gram +ve spore former : *Bacillus*  
[Option ID = 13932]
4. Pleomorphic gram +ve rods : *Corynebacterium*  
[Option ID = 13933]

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**Correct Answer :-**

- Anaerobic gram +ve spore former : *Bacillus*  
[Option ID = 13932]

**94) The active ingredient of Galltrol, a commercial biocontrol agent is:**

**[Question ID = 3485]**

1. *Agrobacterium tumefaciens*  
[Option ID = 13934]
2. *Agrobacterium radiobacter strain K84*  
[Option ID = 13935]
3. *Trichoderma harzianum*  
[Option ID = 13936]
4. *Trichoderma viridae*  
[Option ID = 13937]

**Correct Answer :-**

- Agrobacterium radiobacter strain K84*  
[Option ID = 13935]

**95) After knocking out a gene, when trying to study the effect of the knockout on genome-wide gene expression you would resort to:**

**[Question ID = 3486]**

1. Northern blot [Option ID = 13938]
2. Real time PCR [Option ID = 13939]
3. DNA microarray [Option ID = 13940]
4. DNA footprinting [Option ID = 13941]

**Correct Answer :-**

- DNA microarray [Option ID = 13940]

**96) Which of the following methods is preferred for the long term storage of animal cell cultures?**

**[Question ID = 3487]**

1. Liquid nitrogen [Option ID = 13942]
2. Spray drying [Option ID = 13943]
3. Lyophilization [Option ID = 13944]
4. Agar slopes covered with sterile mineral oil [Option ID = 13945]

**Correct Answer :-**

- Liquid nitrogen [Option ID = 13942]

**97) *Colletotrichum falcatum* causes which of the following diseases?**

**[Question ID = 3488]**

1. Red rot of sugarcane  
[Option ID = 13946]
2. White rust of crucifers  
[Option ID = 13947]
3. Ergot of rye  
[Option ID = 13948]
4. Black stem rust of wheat  
[Option ID = 13949]

**Correct Answer :-**

- Red rot of sugarcane  
[Option ID = 13946]

**98) Mutation in which of the following lambda phage genes/regulatory elements would give rise to clear plaques?**

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**[Question ID = 3489]**

1. *cIII*

[Option ID = 13950]

2. *N*

[Option ID = 13951]

3. *ori O*

[Option ID = 13952]

4. *gam*

[Option ID = 13953]

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**Correct Answer :-**

- *cIII*

[Option ID = 13950]

**99) Which one of the following is an obligate intracellular parasite?**

**[Question ID = 3490]**

1. *Mycobacterium*

[Option ID = 13954]

2. *Staphylococcus*

[Option ID = 13955]

3. *Rickettsia*

[Option ID = 13956]

4. *Streptococcus*

[Option ID = 13957]

**Correct Answer :-**

- *Rickettsia*

[Option ID = 13956]

**100) During uptake and mineralization of hydrocarbon by *Pseudomonas* sp, the role of rhamnolipid is:**

**[Question ID = 3491]**

1. Oxidizing agent

[Option ID = 13958]

2. Reducing agent

[Option ID = 13959]

3. Hydrolyzing agent

[Option ID = 13960]

4. Biosurfactant

[Option ID = 13961]

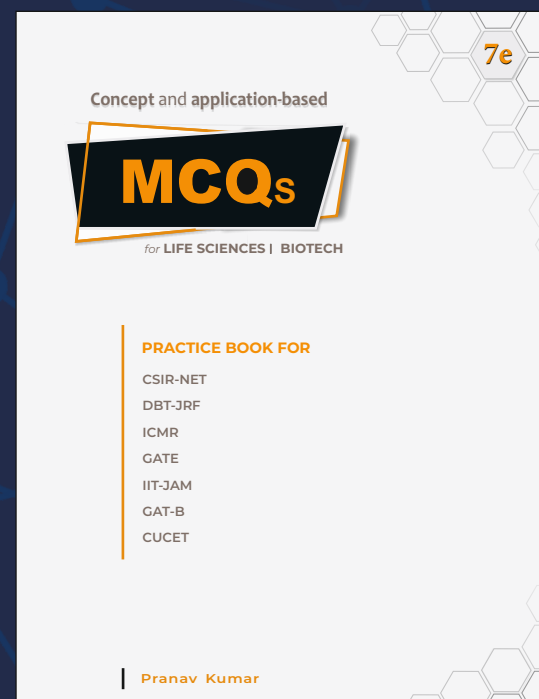
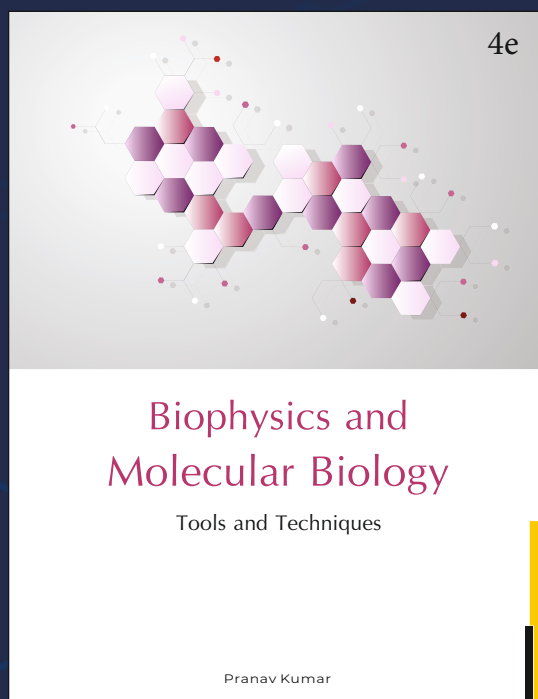
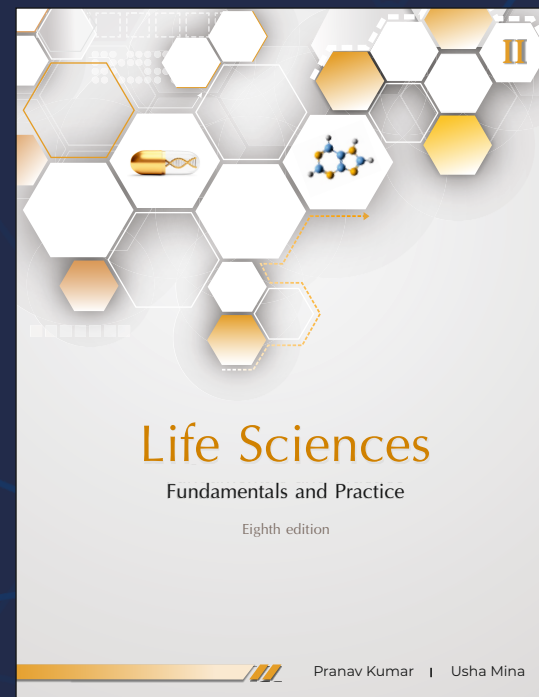
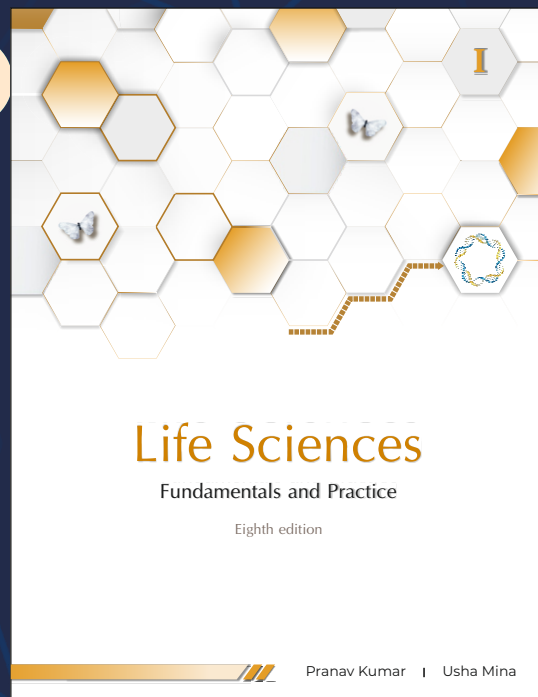
**Correct Answer :-**

- Biosurfactant

[Option ID = 13961]

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