

ETEA MEDICAL PAPER 2017

1. The compound that cannot undergo addition reaction is:

- A) Cyclopropane    B) Benzene    C) Butyne    **D) None of the above**

**Text Book Reference; Page #122,151,164 (Ch#16, 2<sup>nd</sup> Year)**

2. Benzene gives more stable product when undergo

- A) Nucleophilic addition reaction    B) Oxidation reaction    **C) Electrophilic substitution reaction**    D) Electrophilic addition reaction

**Text Book Reference; Page #165(Ch#16, 2<sup>nd</sup> Year)**

3. For callus formation, auxin and cytokinin are required in which ratio?

- A) Balanced    B) Only cytokinin required    C) Low auxin, very high cytokinin    **D) Only auxin**

**Text Book Reference; Page #350(Ch#26 2<sup>nd</sup> Year)**

4. For which purpose myeloma cells (cancerous B.lymphocytes) are used in the production of monoclonal antibodies?

- A) Increased rate of cell division    **B) Immunization with antigen**    C) To avoid contamination    D) As nutrient in media

**Text Book Reference; Page #358(Ch#26 2<sup>nd</sup> Year)**

5. DNA polymerase adds nucleotides to the 3' end of the primer so the direction of replication will be?

- A) 5' to 3'**    B) 3' to 5'    C) 3' end of the primer to 3' end of template strand    D) 3' end of the template strand to the 3' end of the primer

**Text Book Reference; Page #242 (Ch#23 2<sup>nd</sup> Year)**

6. The range of projectile is the same for two angles which are mutually

- A) Perpendicular    B) Supplementary    **C) Complementary**    D) 270°

**Text Book Reference; Page #72(Ch#03 1<sup>st</sup> Year)**

7. A wave of amplitude 20mm has intensity I. another wave of the same frequency but of amplitude 5mm has intensity I<sub>y</sub>. What is I<sub>x</sub>/I<sub>y</sub>?

- A) 2**    B) 4    **C) 16**    D) 256

**Text Book Reference; Page #202(Ch#08 1<sup>st</sup> Year)**

**Hints:** Answer know that; I (Intensity) =Energy/Area. Time

So, I<sub>x</sub>/I<sub>y</sub> and E=1/2kx<sub>i</sub><sup>2</sup> Thus E<sub>x</sub>/x<sub>i</sub><sup>2</sup> So I<sub>x</sub>/I<sub>y</sub>= x<sub>i</sub><sup>2</sup>/x<sub>i</sub><sup>2</sup>y Thus I<sub>x</sub>/I<sub>y</sub>= (20)<sup>2</sup>/(5)<sup>2</sup>=400/25=16

8. The resistance of a device is designed to change with temperature. What is the device?

A) A light dependent resistor B) A potential divider C) A semiconductor diode **D) A thermistor**

**Text Book Reference; Page #78 (Ch#12 2<sup>nd</sup> Year)**

9. I enjoy \_\_\_\_ tennis.

A) to play B) plays C) playing D) to playing

10. Catalytic converter reduces the emission of

A) Unburnt hydrocarbons B) CO C) NO **D) All of the above**

**Text Book Reference; Page #394 (Ch#23 2<sup>nd</sup> Year)**

11. What is the name of the carboxylic acid given below?



A) Propanedioic acid **B) Pentane dioic acid** C) Pentane dicarboxylic acid D) Propane dicarboxylic acid

**Text Book Reference; Page #289 (Ch#20 2<sup>nd</sup> Year)**

12.  $\text{OH}^-_{(\text{alcoholic})} + \text{CH}_3(\text{CH}_2)_2\text{Br}^- \rightarrow$

Product The nature of OH<sup>-</sup> in the above reaction is:

**A) Nucleophile** B) Lewis base C) Ligand D) All of the above

**Text Book Reference; Page #195,197,199,200 (Ch#17 2<sup>nd</sup> Year)**

13. When the sperm count is high, inhibin hormone release increases which:

**A) Inhibits anterior pituitary release follicle stimulating hormone** B) Increase anterior pituitary release of follicle stimulating hormone C) Inhibit release of luteinizing hormone D) Increase release of luteinizing hormone

**Text Book Reference; Page #156 (Ch#20 2<sup>nd</sup> Year)**

14. Implantation of embryo takes place in which week of pregnancy?

A) 1<sup>st</sup> B) 2<sup>nd</sup> C) 3<sup>rd</sup> **D) 4<sup>th</sup>**

**Text Book Reference; Page #179 (Ch#21, 2<sup>nd</sup> Year)**

15. XX-XY type of sex determination pattern is present in which of the following organisms?

A) Humans **B) Butterflies** C) Grasshopper D) Drosophila

**Text Book Reference; Page #216 (Ch#22, 2<sup>nd</sup> Year)**

16. When will 1 C of charge pass a point in an electrical circuit?

- A) When 1A moves through a voltage of 1V      B) When a power of 1W is used for 1s  
 C) **When the current is 5mA for 200s**      D) When the current is 10A for 10s

**Text Book Reference; Page #64 (Ch#12, 2<sup>nd</sup> Year)**

**Hints:**  $Q = It = 5 \times 10^{-3} \times 200 = 5/1000 \times 200 = 1C$

17. A cell of internal resistance  $2.0\Omega$  and electromotive force (e.m.f) 1.5V is connected a resistor of resistance  $3.0\Omega$ . What is the potential difference across the  $3.0\Omega$  resistor?

- A) 5V      B) 1.2V      C) **0.9V**      D) 0.6V

**Text Book Reference; Page #82 (Ch#12, 2<sup>nd</sup> Year)**

**Hints:**  $I = 1.5/3+2 = 1.5/5 = 3/10$  Now  $V = IR = 3/10 \times 3 = 9/10 = 0.9V$

OR  $V = E - Ir = 1.5 - 3/10 \times 2 = 15/10 - 6/10 = 9/10 = 0.9V$

18. In a stationary wave the distance between consecutive antinodes is 25cm. If the wave velocity is  $300ms^{-1}$  then the frequency of the wave will be:

- A) 150 Hz    B) 300 Hz    C) **600 Hz**    D) 750 Hz

**Text Book Reference; Page #218,221(Ch#08 1<sup>st</sup> Year)**

**Hints:** In Stationary wave the distance b/w consecutive antidote is  $l = \lambda/2$  So  $\lambda = 2l = 2(25) = 50cm$

But  $100cm = 1m$  and  $50cm = 50/100 = 0.5m$  Now  $v = f\lambda$  and  $f = v/\lambda = 300/0.5 = \mathbf{600Hz}$

19. The path\_\_\_\_\_paved, so we were able to walk through the path.

- A) **had been**    B) was    C) has been    D) being

20. Choose the correct sentence.

- A) Naila was exhausted that on she lain down for a nap  
 B) Naila was so exhausted that on she laid down for a nap  
 C) **Naila was so exhausted that on she was lying down for a nap**  
 D) Naila was so exhausted that on she will lay down for a nap

21. The bond energy of  $H_2$  molecule ( $H_2 \rightarrow 2H$ ) is:      2017-21

- A) **436Kj/mol** B) 40.7 Kj/mol C) 272 Kj/mol D)  $436 \div \text{Avagadros no}$  Kj/mol

**Text Book Reference; Page #91(Ch#03, 1<sup>st</sup> Year)**

22. Considering the molecular orbital theory(MOT), chooses the correct relative energies order.

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- A)  $\sigma_{1s} < \sigma_{1s}^* < \sigma_{2s} < \sigma_{2s}^* < \sigma_{2p_x} < \pi_{2p_z} = \pi_{2p_y} < \pi_{2p_z}^* < \pi_{2p_y}^*$

C)  $\sigma_{15} < \sigma_{15}^X < \sigma_{25} < \sigma_{25}^X < \pi_{2p_x} = \pi_{2p_x} < \sigma_{2p_y}$  D)  $\sigma_{15} < \sigma_{15}^X < \sigma_{25} < \sigma_{25}^X < \pi_{2p_y} < \pi_{2p_z} < \pi_{2p_x}$

**Text Book Reference; Page #86(Ch#03, 1<sup>st</sup> Year)**

23.The oxidation of pent-2-one (2-pentanone) with nascent oxygen gives:

A) Propanal B) Propanoic acid C) **Ethanoic acid** D) Pentanoic acid

**Text Book Reference; Page #279 (Ch#19, 2<sup>nd</sup> Year)**

24.If medulla oblongata of a person brain is damaged which of the following process will be disturbed?

A)Thinking B)Sleep C) Thirst D) **Swallowing**

**Text Book Reference; Page #100 (Ch#17, 2<sup>nd</sup> Year)**

25.Otitis media is an inflammation of which part of the

A)Brain B) **Middle ear** C) Lungs D) Urinary tract

**Text Book Reference; Page #16 (Ch#14, 2<sup>nd</sup> Year)**

26.In which of the following disorders the structure and function of normal spinal cord is damaged?

A)Arthritis B)Sciatica C) **Spondylosis** D) Disc slip

**Text Book Reference; Page #68 (Ch#16, 2<sup>nd</sup> Year)**

27.A stationary nucleus has nucleon number A. The nucleus decays by emitting a proton with speed “v” to form a new nucleus with speed u. The new nucleus and the proton move away from one another in opposite directions. Which equation gives “v” in terms of A and u?

A)  $v=(A/4-1)u$  B)  $v=(A-1)u$  C)  $v=Au$  D)  **$v=(A+1)u$**

28.A person, travelling on a motorway a total distance of 200km, travels the first 90km at an average speed of 80km/hr. Which average speed must be obtained for the rest of the journey if the person is to reach the destination in a total time of 2 hours 0 minutes?

A)110 km/hr B)120 km/hr C)122 km/hr D) **126 km/hr**

29.A object of mass “m” travelling with speed “v” has a head-on collision with another object of mass “m” travelling with speed “v” in the opposite direction, the object sticks together after the collision. What is the total loss of kinetic energy in the collision?

A)0 B)  $1/2mv^2$  C)  **$mv^2$**  D)  $2mv^2$

30.He asked me what my name was and what I did

A) He said to me, “What was my name and what did I do?”

**B) He said to me, “What is your name and what do you do?”**

C) He said to me, "What my name was and what I did?"

D) He said to me, "What his name was and what did he do?"

31. Four beakers containing ethanol, ethanol, propanone and phenol separately. Aqueous bromine was added to each beaker. A white ppt was produced in one beaker. This beaker contains.

A) Ethanol                      **B) Phenol**                      C) Ethanal D) Propanone

**Text Book Reference; Page #246 (Ch#18, 2<sup>nd</sup> Year)**

32. To differentiate between the white ppt of AgCl and off-white ppt of AgBr we use:

A) Dil.solution of NaOH                      B) Dil.solution of Pb(NO<sub>3</sub>)<sub>2</sub>

**C) Dil.solution of NH<sub>3</sub>**                      D) Dil.solution of FeCl<sub>3</sub>

**Text Book Reference; Page #101(Ch#15, 1<sup>st</sup> Year)**

33. CH<sub>3</sub>CH<sub>2</sub>NH<sub>2</sub> + C<sub>2</sub>H<sub>5</sub>-C-C<sub>2</sub>H<sub>5</sub> → Product:

A. **Schiff's salt** B. Diazonium salt C. Amide D. Imine + Amide

**Text Book Reference; Page #213,214 (Ch#17, 2<sup>nd</sup> Year)**

34. If the primer annealing temperature is increased to 94<sup>0</sup>C . What will happen ?

A. Annealing B. Extension **C. No Annealing** D. Primer-dimer formation

**Text Book Reference; Page #336(Ch#26, 2<sup>nd</sup> Year)**

35. Choose acids that are showing leveling effect.

i) HClO<sub>4</sub>    ii) HI    iii) HCl    iv) HF

A. i & iv                      B. i, iii, & iv                      C. iii & iv                      **D. i, ii, & iii**

**Text Book Reference; Page #219 (Ch#08, 1<sup>st</sup> Year)**

36. The experiments by Hershey and Chase helped confirm that DNA was the hereditary material on the basis of the finding that :

A. Radioactive phage were found in the pellet B. Radioactive cells were found in the supernatant

C. Radioactive sulfur was found inside the cell **D. Radioactive phosphorus was found in the cell**

**Text Book Reference; Page #238 (Ch#23, 2<sup>nd</sup> Year)**

37. How many nucleotides are in 12 mRNA codons?

A. 12                      B. 24                      **C. 36**                      D. 48

**Text Book Reference; Page #247(Ch#23, 2<sup>nd</sup> Year) OR Ch#2, Page#54, 1<sup>st</sup> Year**

38. Which of the following is the suitable vector to be incorporated with the large external DNA fragment.

- A. **Small size vector** B. Large size vector C. Large size vector with no origin of replication.  
D. Small size vector with no origin of replication.

**Text Book Reference; Page #332(Ch#26, 2<sup>nd</sup> Year)**

39. A value for the acceleration of free fall on earth is given as  $(10 \pm 2) \text{ m s}^{-2}$ . Which statement is correct ?

- A. **The value is accurate but not precise.** B. The value is both accurate and precise.  
C. The value is neither precise nor accurate. D. The value is precise but not accurate.

**Text Book Reference; Page #11,12,13 (Ch#01, 1<sup>st</sup> Year)**

**Hints:**

$\pm 2$  is least count. Thus Precision  $\propto 1/\text{L.C}$  But Fractional Error =  $\text{L.C}/\text{Measured value}$

Fractional Error =  $2/10 = 0.2$  So Accuracy  $\propto 1/\text{Fractional Error}$

As fractional error is small i.e. 0.2 so accuracy is greater while L.C is greater i.e. 2 therefore precision is least (low)

40. Which experimental technique reduces the systematic error of the quantity being investigated?

- A. **Adjusting an ammeter to remove its zero error before measuring a current.**  
B. Measuring several inter modal distance on a standing wave to find the mean inter modal distance.  
C. Measuring the diameter of a wire repeatedly and calculating the average.  
D. Timing a large number of oscillation to find a period

**Text Book Reference; Page #08 (Ch#01, 1<sup>st</sup> Year)**

41. A metal sphere of radius  $r$  is dropped into a tank of water. As it sinks at speed  $v$ , it experiences a drag force  $F$  given by  $F = krv$ , where  $k$  is a constant: What are the SI base units of  $k$ ?

- A.  $\text{kg m}^2 \text{s}^{-1}$  B.  $\text{kg m}^2 \text{s}^{-2}$  C.  **$\text{kg m}^{-1} \text{s}^{-1}$**  D.  $\text{kg m s}^{-2}$

**Hints:  $k = F/rv = \text{N/m.m.sec}^{-1} = \text{kg.m.sec}^{-2}/\text{m}^2.\text{sec}^{-1} = \text{kg m}^{-1} \text{s}^{-1}$**

42. Choose the correct sentence.

- A. How long your wearing glasses ? B. How long do you wear the glasses ?  
C. How long you wear glasses ? D. **How long have you been wearing glasses ?**

43. A car not engine working between 200k and 400k has a work output of 600 J per cycle. How much heat energy is supplied to the engine from the source of each cycle.

- A. 1400 J      **B. 1200 J**      C. 1700 J      D. 1300 J

**Text Book Reference; Page #302,303 (Ch#10,1<sup>st</sup> Year)**

**Hints:**  $Q_1 = \Delta W / \eta$  ( $\eta = T_1 - T_2 / T_1 = 400 - 200 / 400 = 200 / 400 = 2/4 = 0.5$ )

$$Q_1 = \Delta W / \eta = 600 / 0.5 = 1200J$$

44. What happens when charge is placed on a soap bubble ?

- A. It collapse      **B. Its radius increases.**  
C. Its radius decreases.      D. None of the above.

45. Choose the antonym from the word "ABROGATE".

- A. Transgress      B. Signify      C. Alleviate      **D. Ratify**

46. Which ion is stable in aqueous solution ?

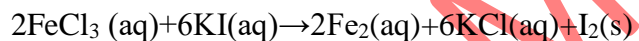
- A.  $Sc^{3+}$       **B.  $Li^{2+}$**       C.  $Ba^{3+}$       D.  $Na^+$

47. Colloidal particles can be separated by using:

- A. Ordinary filter paper      B. Coarse filter paper      C. Fine Filter paper      **D. Extremely fine filter paper**

**Text Book Reference; Page #290 (Ch#10, 1<sup>st</sup> Year)**

48. Consider the following reaction



$$\text{Rate} = [FeCl_3]^1 [KI]^2$$

Choose the correct molecularity and the order of reaction respectively.

- A. 2 and 2      B. 6 and 2      **C. 8 and 3**      D. 8 and 2

**Text Book Reference; Page #240 (Ch#09, 1<sup>st</sup> Year)**

49. Which of the following Nutrient is incorrectly paired with its function in plant ?

- A. Iron-cytochromes and chlorophyll      **B. Molybdenum cell permeability**  
C. Cobalt- Required by nitrogen fixers      D. Calcium- formation of cell wall.

**Text Book Reference; Page #261(Ch#10, 1<sup>st</sup> Year)**

50. Which cell are the responsible for movement of sugar as per mass flow hypothesis.

- A. Tracheids, vessels, elements      B. Tracheids, Companion cells

C. Vessels elements, companion cells      **D. Companion cell, sieve-tubes**

**Text Book Reference; Page #271(Ch#10, 1<sup>st</sup> Year)**

51. After buying green bananas or unripe avocados, they can be kept in a brown bag to ripen. The hormones released by the fruit and trapped in the bag is probably:

A. Abscises acid      B. Cytokinin      **C. Ethylene**      D. Gibberellic acid.

**Text Book Reference; Page #287(Ch#10, 1<sup>st</sup> Year)**

52. For the location / detection of a gene in a DNA library which of the following is used ?

A. Primer      **B. Probe**      C. Restriction enzyme      D. Taq Polymerase

**Text Book Reference; Page #338(Ch#26, 2<sup>nd</sup> Year)**

53. Under UV illuminator, DNA bands are seen in agarose gel due to which of the following?

A. Agarose      B. Charge in DNA      **C. Fluorescent dye**      D. Radioactive dye

**Text Book Reference; Page #342,343(Ch#26, 2<sup>nd</sup> Year)**

54. When a car travelling with constant velocity passes a stationary observer, the observer hears a change in the frequency of sound emitted by the car. Which statement is correct ?

A. The change in frequency is greater as a car moves away than as it approaches.

**B. The greater the speed of the car, the greater the change in observed frequency.**

C. The observed frequency is lower as the car moves toward the observer and higher as the car moves away from the observer.

D. The volume of the sound heard by the observer does not change as the car approaches.

**Text Book Reference; Page #230,231,Ch#08, 1<sup>st</sup> Year**

55. A parachutist is falling constant terminal velocity. Which statement is not correct?

A. Gravitational potential energy is converted into kinetic energy of the air.

**B. Gravitational potential energy is converted into kinetic energy of the parachutist.**

C. Gravitational potential energy is converted into thermal energy of the air.

D. Gravitational potential energy is converted into thermal energy of the parachutist.

**Hints:** As the parachutist is falling with constant terminal velocity. Means its velocity remain the same. As  $K.E = \frac{1}{2}mv^2$ , It means K.E remain the same.

Option B is correct. i.e. The gravitational potential energy is not converting to K.E of the Parachute.

56. The time period of the simple pendulum is 2 second. If its length is increased by 4 times, then its period becomes:



- A. 16s      B. 12s      C. 8s      D. 4s

**Text Book Reference; Page #07 (Ch#07, 1<sup>st</sup> Year)**

$$T = \frac{2\pi}{\omega} \quad \text{As } T = 2\text{sec} \quad \Rightarrow T = \frac{2\pi}{\omega} = \frac{2\pi}{\pi/2} = 2T = 2 \times 2 = 4\text{sec}$$

57. Choose the correct sentence.

- A. **The village folk were present.** B. The village folk was present.  
C. The village folks were present.      D. The village folks was present.

58. The number of chiral centres in a molecular of S-bromo 3-chloro hexan-2-ol is/are:

- A. 1      B. 3      C. 2      D. 5

**Text Book Reference; Page #138,139 (Ch#16, 1<sup>st</sup> Year)**

59. Which group when attached to benzene will increase its reactivity:

- A. **-NHR<sup>+</sup>**      B. -NH<sub>3</sub>      C. -C≡N      D. -COR

**Text Book Reference; Page #74 (Ch#16, 1<sup>st</sup> Year)**

60. The compound which purely acidic character is:

- A. Mg (OH)<sub>2</sub>      B. Al(OH)<sub>3</sub>      C. **Si (OH)<sub>4</sub>**      D. None of the above **Text Book Reference; Page #15 (Ch#13, 1<sup>st</sup> Year)**

61. Which of the following is a non-sense codon?

- A. **UGA**      B. UAU      C. CAU      D. GAU

**Text Book Reference; Page #247 (Ch#23, 2<sup>nd</sup> Year)**

62. If a disorder is not present in a child family but the fetus itself is infected before birth, it is known as:

- A. Somatic Mutation      B. Hereditary mutation      C. Germ line mutation

**D. De novo mutation**

**Text Book Reference; Page #253 (Ch#23, 2<sup>nd</sup> Year)**

63. What will happen if a nucleotide is deleted from a gene having 9 nucleotides in its transcriptional unit?

- A. **Change in Phenotype**      B. No change in Phenotype      C. Synthesis of 3 amino acids.  
D. Synthesis of 4 amino acids.

**Text Book Reference; Page #254 (Ch#23, 2<sup>nd</sup> Year)**

64. Work function for a certain surface is 3.26 eV. Minimum frequency, light must have in order to eject electron from surface will be:

- A.  $1.6 \times 10^{15}$  Hz      B.  $3.2 \times 10^{15}$  Hz      C.  $4.8 \times 10^{15}$  Hz      **D.  $6.4 \times 10^{15}$  Hz**

**Text Book Reference; Page #314 (Ch#18, 2<sup>nd</sup> Year)**

65. The units of Planck's constant are the same as that of :

- A. **Angular Momentum**      B. Work      C. Force      D. Torque

**Hints:**  $h = E/f = J/\text{sec}^{-1} \text{N.m} = \text{Kgm}^2/\text{sec}^2 \cdot \text{sec}^{-1} = \text{kgm}^2/\text{sec}$  and  $L = rP = \text{m.kg.m/sec} = \text{kgm}^2/\text{sec}$

66. A Radioactive substance has a half-life of 60 minutes. During 3 hours, the percentage of the material that decayed would be:

- A. **12.5%**      B. 87.5%      C. 8.5%      D. 25.1%

**Text Book Reference; Page #392,393 (Ch#20, 2<sup>nd</sup> Year)**

67. While the city has earned record revenue this year, \_\_\_\_\_ well behind in exports:

- A. It still lag      **B. It still lags**      C. It lag still      D. It lags still

68. The compound which can be hydrolyzed by means of water is:

- A.  $\text{CCl}_4$       **B.  $\text{SiCl}_4$**       C.  $\text{CH}_4$       D. None of the above

**Text Book Reference; Page #119, Ch#16 & Page#31, Ch#13 2<sup>nd</sup> Year**

69. Choose the correct statement about cycloalkanes:

- A. Cyclopropane and cyclobutane are liquids at room temperature.  
B. Cycloalkanes are insoluble in ethanol and ether but soluble in water.  
**C. Their melting and boiling points show a gradual increase with increases molecular weight.**  
D. Both (B) & (C) are correct

**Text Book Reference; Page #120 (Ch#16, 2<sup>nd</sup> Year)**

70. Which one is a strong nucleophile:

- A.  **$\text{C}_6\text{H}_5-\text{O}^-$**       B.  $\text{H}-\text{O}^-$       C.  $\text{NH}_3$       D.  $\text{C}_2\text{H}_5-\text{O}$

**Text Book Reference; Page #120 (Ch#17, 2<sup>nd</sup> Year) Or Ch#16 Page 124**

71. Choose the correct arrangement of the various regions of the electromagnetic spectrum in terms of wave length.

- A.  $\text{Ir} > \text{uv} > \text{visible} > \text{microwave} > \text{radio frequency}$       B.  $\text{Microwave} > \text{ir} > \text{visible} > \text{uv} > \text{radio frequency}$

**C. Radio frequency > microwave >ir> visible >uvD. Visible >ir>uv> microwave > radio wave**

**Text Book Reference; Page #429 ,Ch#24, 2<sup>nd</sup> Year**

72. If one of the following components is missing , bacteria can not increase the number of its plasmid copies.

- A. Antibiotic resistance gene.                      **B. Origin of replication**  
C. Cloning site    D. Ligases enzymes

**Text Book Reference; Page#332(Ch#26, 2<sup>nd</sup> Year)**

73. Identify the mismatch pair in the following:

- A. Cyanobacteria – primary producer                      B. Grasshopper – primary producer  
C. Fungi – Decomposer    **D. Zooplankton – secondary consumer**

74. What will happen if a vector (plasmid) is cut with a different restriction enzyme which cuts the external DNA to be incorporated in the vector (plasmid) ?

- A. **Ligation**    B. No ligation                      C. Tight ligation                      D. Cloning

**Text Book Reference; Page #334 (Ch#26, 2<sup>nd</sup> Year)**

75. The acceleration of free fall on the Moon is one-six of that of Earth. On Earth, it takes time ‘t’ for a stone to fall from rest a distance of 2 m. What is the time taken for a stone to fall from rest a distance of 2 m on the Moon?

- A. 6 t                      B. T/6                      C.  $t\sqrt{6}$  D.  $\frac{t}{\sqrt{2}}$

**Text Book Reference; Page #60 (Ch#03, 1<sup>st</sup> Year)**

**Hints:**  $t = \frac{\sqrt{2e}}{g}$  As  $t(\text{earth}) = \frac{\sqrt{2 \times 2}}{g}$  Thus  $t(\text{moon}) = \frac{\sqrt{2 \times 2}}{g/6} = \frac{\sqrt{2 \times 2 \times 6}}{g} = \frac{\sqrt{2 \times 2}}{g} \times \sqrt{6} = t\sqrt{6}$  –

76. Before a thunder stand on end. A hair with mass 0.50 mg and charge 1.0 pc is supported by a force other than the weight of the hair and the electric force. What is the electric field strength ?

- A.  $4.9 \times 10^3 \text{ N C}^{-1}$     B.  $4.9 \times 10^5 \text{ N C}^{-1}$     **C.  $4.9 \times 10^6 \text{ N C}^{-1}$**     D.  $4.9 \times 10^9 \text{ N C}^{-1}$

**Text Book Reference; Page #07 (Ch#11, 2<sup>nd</sup>Year)**

77. Two lamps are connected in series to a 250 V power supply. One lamp is rated 240 V, 60 W and the other rated 10 V, 2.5 W. Which statement most accurately describe what happens?

- A. Both lamps light at less than their normal brightness.  
B. Both lamps light at their normal brightness.

C. Only the 240 V lamp lights. **D. The 10 V lamp blows.**

**Text Book Reference; Page #87 (Ch#12, 2<sup>nd</sup> Year)**

78. Every person must learn\_\_\_\_\_?

A. That how wisely his time can be used. **B. To make wise use of his time.**

C. That this time need a wise uses. D. To using his time in a wisely manner.

79. In movies during fight a blood red solution is using as an artificial blood. Which of the following complex ion is used for this solution ?

A.  $[\text{Fe}(\text{H}_2\text{O})_6]^{+2}$  B.  $[\text{Cu}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{+2}$  **C.  $[\text{Fe}(\text{SCN})(\text{H}_2\text{O})_5]^{+2}$**  D.  $[\text{Fe}(\text{H}_2\text{O})_6]$

**Text Book Reference; Page #75(Ch#14, 2<sup>nd</sup> Year)**

80. The compound which can form hydrogen bond with water is:

A.  $\text{CH}_3\text{--O--CH}_3$  B.  $\text{CH}_3\text{--CH}_2\text{--OH}$  **C.  $\text{CH}_3\text{--CH}_2\text{--NH}_2$**  D. None of the above.

**Text Book Reference; Page #209(Ch#17, 2<sup>nd</sup> Year)**

81. The compound with most exothermic lattice energy is:

A.  $\text{CaCl}_2$  B.  $\text{K}_2\text{O}$  **C.  $\text{CaO}$**  D.  $\text{BaCl}_2$

**Text Book Reference; Page #177(Ch#06, 1<sup>st</sup> Year)**

82. Sarcolemma is the membrane around?

A. Bone B. Joints **C. Muscle fiber** D. Heart

**Text Book Reference; Page #72 (Ch#16, 2<sup>nd</sup> Year)**

83. The deficiency of calcitonin results in ?

A. Bone formation **B. Kidney stone** C. Hyperthyroidism D. Hypothyroidism

**Text Book Reference; Page #125 (Ch#18, 2<sup>nd</sup> Year)**

84. In which of the following the female workers are sterile ?

A. Ants **B. Honeybee** C. Baboon D. Parrots

**Text Book Reference; Page #147 (Ch#19, 2<sup>nd</sup> Year)**

85. If in solution some bacteria infected by a certain phages had somehow developed the ability to make a particular amino acid that was not in their genes before. What would be the possible explanation to his new ability ?

A. Induction B. Transformation **C. Transduction** D. Conjugation

86. Identify in which of the following the genetic information is catalyzed using reverse transcription

A. Protein→DNA B. RNA →DNA C. DNA→RNA D. RNA Protein

**Text Book Reference; Page #114(Ch#05, 1<sup>st</sup> Year)**

87. Which one is not an opportunistic disease related to HIV infection:

A. **Destruction of body immune system** B. Recurrent pneumonia

C. Pulmonary tuberculosis D. Toxoplasmosis

**Text Book Reference; Page #115(Ch#05, 1<sup>st</sup> Year)**

88. A tuning fork A produces 4 beats / second with another tuning fork B of frequency 280 Hz. When fork A is loaded with a little wax, the beat frequency changes to 2. The frequency of fork A before loading is:

A. 292 Hz B. **284 Hz** C. 290 Hz D. 288 Hz

**Text Book Reference; Page #215 (Ch#08, 1<sup>st</sup> Year)**

89. The sound waves of frequency more than 20 kHz are termed as:

A. Supersonic B. Audible C. Infrasonic D. **Ultrasonic**

**Text Book Reference; Page #236 (Ch#08, 1<sup>st</sup> Year)**

90. The refractive index is equal to the tangent of the angle of polarization. It is called:

A. **Brewster's Law** B. Malus's Law C. Bragg's Law D. Grimaldi's Law

**Text Book Reference; Page #272 (Ch#09, 1<sup>st</sup> Year)**

91. "He is busy. Would you like to leave a message?" Said the assistant.

A. **The assistant told that he is busy and asked me to leave a message.**

B. The assistant told that he is busy and ask me to leave a message

C. The assistant told that he was busy and asked me to leave a message.

D. The assistant told that he was busy and asked me to leave a message.

92. The less energetic and more stable compound among the following is:

A. Cyclobutane B. Hex-1-ene C. Cyclopropane D. **Propene**

**Text Book Reference; Page #122(Ch#16, 2<sup>nd</sup> Year)**

93. Amorphous solids are made by fusing silicates with:

A. Boric acid B. Aluminum oxide C. Phosphorus pent oxide D. **All of the above**

**Text Book Reference; Page #166(Ch#06, 1<sup>st</sup> Year)**

94. What is the product when chlorine gas is passed over element silicon in powdered state and heated it produce colorless liquid having formula ?

- A.  $\text{SiCl}_2$       B.  $\text{SiCl}_4$       C.  $\text{Si}_2\text{Cl}_3$       D.  $\text{SiCl}$

**Text Book Reference; Page #09(Ch#13, 2<sup>nd</sup> Year)**

95. Compound resistant to thermal decomposition is :

- A.  $\text{Li}_2\text{CO}_3$       B.  $\text{NaNO}_3$       C.  $\text{Ba}(\text{NO}_3)_2$       D.  $\text{Na}_2\text{CO}_3$

**Text Book Reference; Page #22,23(Ch#13, 2<sup>nd</sup> Year)**

96. If  $\text{CO}_2$  level increase from the normal level, what will happen?

- A. Decrease in sea level      B. **Increase in sea level**      C. Longer winter season  
D. Daytime will increase

**Text Book Reference; Page #400(Ch#23, 2<sup>nd</sup> Year)**

Increase in sea level b/c  $\text{CO}_2$  increase in air, then temperature increases due to global warming,,, and glaciers melts due to which sea level increase.

97. Approximately how much calories of free energy is stored in plant biomass for every mole of  $\text{CO}_2$  fixed during photosynthesis ?

- A. 110      B. 112      C. 114      D. 116

98. Which of the following vaccine has least side effects:

- A. Attenuated vaccine      B. Killed vaccine      C. Subunit vaccine      D. Toxoid vaccine

**Text Book Reference; Page #98(Ch#27, 2<sup>nd</sup> Year)**

99. The energy stored in the spring of water is:

- A. Kinetic energy      B. Electrical energy      C. **Elastic potential energy**      D. Solar energy

**Text Book Reference; Page #82(Ch#04, 1<sup>st</sup> Year)**

100. The kinetic energy and potential energy of a particle executing simple harmonic motion will be equal for the displacement (where  $x_0$  is the amplitude)

- A.  $\frac{x_0^2}{3}$       B.  $\frac{x_0^2}{2}$       C.  $\frac{x_0^2}{\sqrt{2}}$       D.  $x_0\sqrt{2}$

**Text Book Reference; Page #179(Ch#07, 1<sup>st</sup> Year)**

**Hints:**  $E_T = \frac{1}{2}kx^2$  Thus  $K.E + P.E = \frac{1}{2}kx^2$

Suppose  $K.E = P.E$ , So  $P.E + P.E = \frac{1}{2}kx^2 \Rightarrow 2P.E = \frac{1}{2}kx^2$

$$\Rightarrow 2\left(\frac{1}{2}kx^2\right) = \frac{1}{2}kx^2 \Rightarrow x^2 = \frac{1}{2}kx^2 \text{ So } x = \frac{x_0}{\sqrt{2}}$$

$\sqrt{2}$

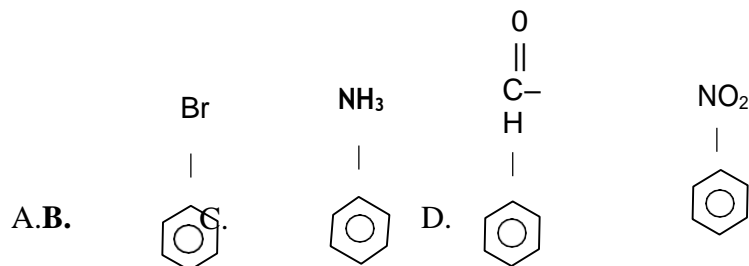
101. If x-component of a vector is  $\sqrt{3}$  and y-component is 1, then the angle made by the vector along x-axis is:

A.  $60^\circ$  B.  $30^\circ$  C.  $45^\circ$  D.  $90^\circ$

Text Book Reference; Page #32,33(Ch#07, 1<sup>st</sup> Year)

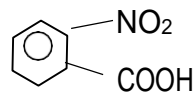
Hints:  $\tan \theta = \frac{\text{x-component}}{\text{y-component}}$  Thus  $\tan \theta = \frac{\sqrt{3}}{1} \Rightarrow \theta = \tan^{-1} \sqrt{3} \Rightarrow \theta = 60^\circ$

102. Which compound will undergo substitution reaction faster than benzene ?



Text Book Reference; Page #174,Ch#16,2<sup>nd</sup> Year

103. The IUPAC name of the compound given below:



A. m-nitro benzoic acid B. o-nitro benzene methanoic acid C. o-nitro benzoic acid  
D. None of the above

Text Book Reference; Page 155,156, Ch#16,2<sup>nd</sup> Year

104. The first that oxygenated the atmosphere were:

A. Cyanobacteria B. Phototrophic organisms C. Anaerobic organisms D. All of the above

Text Book Reference; Page #269,270(Ch#24, 2<sup>nd</sup> Year) OR Page#130-134 (Ch#6, 1<sup>st</sup> year)

105. What event is thought to have contributed to the evolution of eukaryotes ?

A. Global warming B. Glaciations C. Volcanic activity D. Oxygenation of the atmosphere

Text Book Reference; Page #269,270,271(Ch#24, 2<sup>nd</sup> Year) OR Page#160(Ch#7, 1<sup>st</sup> year)

106. Which of the locomotor organ would likely be the shortest?

A. A flagellum B. A cillum C. An extended pseudopod D. A pellicle

Text Book Reference; Page #161,163,164, Ch#7, 1<sup>st</sup> year

107. In Young double slit experiment with sodium light, the slit are 0.589m apart. What is the angular width of the third maximum given  $\lambda = 589\text{nm}$

- A.  $\sin^{-1}(3 \times 10^{-6})$       B.  $\sin^{-1}(3 \times 10^{-8})$       C.  $\sin^{-1}(3 \times 10^{-6})$       D.  $\sin^{-1}(3 \times 10^{-8})$

**Text Book Reference; Page #252 Ch#9, 1<sup>st</sup> year**

**Hints:**  $d \cdot \sin \phi = m \lambda$  (Here  $d = 0.589 \text{m}$ ,  $m = 3$ ,  $\lambda = 589 \times 10^{-9} \text{m}$ )

$$\Phi = \sin^{-1} m \lambda / d = \sin^{-1} 3 \times 589 \times 10^{-9} / 0.589 = \sin^{-1} (3 \times 10^{-6})$$

108. Which of the following cannot be polarized ?

- A. Radio waves      B. Ultraviolet rays      C. X-rays      **D. Ultrasonic waves**

**Text Book Reference; Page #269 Ch#9/Pag#236, Ch#08, 1<sup>st</sup> year**

109. When a ray of light enters a glass slit from air:

- A. Its wave length decreases      B. Its wave length increases  
C. Its frequency increases      D. Its frequency decreases

110. Choose the antonym of the word "UNTENABLE".

- A. Tender      B. Sheepish      **C. Supportable**      D. Tremulous

111. Coagulation of proteins may be caused by:

- A. Heat      B. Change in pH      **C. Heavy metal salts**      D. All of the above

112. Kolbe's electrolysis of sodium butyrate  $\text{CH}_3\text{CH}_2\text{CH}_2\text{COONa}$  gives:

- A.  $\text{C}_6\text{H}_{12}$       B.  $\text{C}_6\text{H}_{14}$       C.  $\text{C}_5\text{H}_{10}$       D.  $\text{C}_5\text{H}_{12}$

**Text Book Reference; Page #304 (Ch#20, 2<sup>nd</sup> Year)**

113. Chlorine gas dissolves in water to some extent to give:

- A. Yellow Colored solution      **B. Greenish Colored solution**  
C. Bluish Colored solution      D. Colorless solution

**Text Book Reference; Page #07 (Ch#13, 2<sup>nd</sup> Year)**

114. One of the following statements is true regarding Basidiomycota.

- A. They are most important source of antibiotics  
B. They have no known sexual stage.  
**C. Hyphae fuse to give rise to dikaryotic mycelium**  
D. The vast majority of spores are formed asexually

**Text Book Reference; Page #173, Ch#7, 1<sup>st</sup> year**

115. The sprouting gametophyte of a moss consists of a filamentous, branched structure called:



A. Mycelium      B. Hyphae      **C. Protonema** D. Bud

**Text Book Reference; Page #188, Ch#8, 1<sup>st</sup> year**

116. Which seedless plant is a renewable source of energy ?

A. club moss      B. horsetail      **C. sphagnum moss**      D. fern

**Text Book Reference; Page # 191, Ch#8, 1<sup>st</sup> year**

117. Light of wave  $500 \times 10^{-9}$  m falls normally on a plane diffraction grating having  $8 \times 10^3$  lines per cm. The minimum number of images seen is:

A: 3      B. 4      C. 5      D. 1

118. The speed of sound in air at NTP is  $300 \text{ ms}^{-1}$ . If the air pressure become 4 times; then the speed of the sound will be:

A.  $150 \text{ s}^{-1}$       **B.  $300 \text{ s}^{-1}$**       C.  $600 \text{ s}^{-1}$  D. None

**Text Book Reference; Page # 207, Ch#8, 1<sup>st</sup> year**

**Hints:** Speed of sound in a gas is independent of its pressure

119. Standing waves are produced in 10 m long stretched string. If the string vibrates in 5 segments and wave velocity is  $20 \text{ ms}^{-1}$ , its frequency is:

A. 2 Hz      B. 4 Hz      **C. 5 Hz**      D. 10 Hz

**Text Book Reference; Page # 222, Ch#8, 1<sup>st</sup> year**

**Hints:**  $\lambda_n = 2L/n$  (Here  $n=5, L=10$ ) Thus  $\lambda_n = 2L/n = 2 \times 10/5 = 4 \text{ m}$  As

$f = v/\lambda = 20 \text{ ms}^{-1}/4 = 5 \text{ Hz}$

120. Why did your supervisor take such a strong disciplinary action when you were innocent ?

A. Why has such a strong disciplinary action taken by your supervisor when you were innocent ?

B. Why was such a strong disciplinary action being taken by your supervisor when you were innocent ?

**C. Why was such a strong disciplinary action taken by your supervisor when you were innocent ?**

D. Why such a strong disciplinary action was taken by your supervisor when you were innocent ?

121.  $K_a$  values of some compound are given below, select the correct order of acidic strength:

i.  $\text{H}_2\text{O} \rightleftharpoons \text{H}^+ + \text{OH}^- K_a = 1 \times 10^{-14}$ .

ii.  $\text{ROH} \rightleftharpoons \text{RO}^- + \text{H}^+ K_a = 1 \times 10^{-18}$ .



A.  $\text{ROH} > \text{H}_2\text{O} > \text{C}_6\text{H}_5\text{OH} > \text{RCOOH}$  B.  $\text{C}_6\text{H}_5\text{OH} > \text{H}_2\text{O} > \text{ROH} > \text{RCOOH}$

**C.  $\text{RCOOH} > \text{C}_6\text{H}_5\text{OH} > \text{H}_2\text{O} > \text{ROH}$**  D.  $\text{RCOOH} > \text{ROH} > \text{C}_6\text{H}_5\text{OH} > \text{H}_2\text{O}$

**Text Book Reference; Page #219, Ch#08, 1<sup>st</sup> year**

122. The compound which cannot be hydrolyzed by water is

O

II



O O

II



O

II



**D. None of the above**

**Text Book Reference; Page #303, Ch#20, 2<sup>nd</sup> year**

123.  $\text{KOH}$  (cicohollic) +  $\text{CH}_3(\text{CH}_3)_2\text{CH}_2\text{Br}$  (1), The reactants in the condition given will undergo:

A. Nucleophilic substitution reaction. **B. Elimination reaction.** C. Nucleophilic addition.

D. None of the above.

**Text Book Reference; Page #147,148 Ch#16, 2<sup>nd</sup> year/Page#199,Ch#17**

124. Phosphorus (white) catches fire in air and burns with the formation of white smoke the product formed is:

A. Phosphorus (iii) oxide B. Phosphorus (v) oxide C. Phosphorus (ii) oxide **D. Both (A) & (B)**

**Text Book Reference; Page #08,09, Ch#13, 2<sup>nd</sup> year**

125. Coordination number six complex having  $d^2sp^3$  hybridization exist in:

A. Tetrahedral shape

B. Square planar shape

C. Trigonalbipyramidal shape **D. Octahedral shape**

**Text Book Reference; Page #56,57, Ch#14, 2<sup>nd</sup> year**

126. What type of hybridization is/are present in Hex-4-ene 1-yne:

A.  $Sp^2$  B.  $Sp$  C.  $Sp$  and  $Sp^2$  **D.  $Sp$ .  $Sp^2$ .  $Sp^3$**

127. In order to see various aspects of specimen a three dimensional image of the object can be produced using:

A. Compound microscope B. Dark microscope  
C. Transmission electron microscope **D. Scanning electron microscope**

**Text Book Reference; Page #03, Ch#01, 1<sup>st</sup> year**

128. The usual position of the two centrioles in relation to each other is at right angle in:

A. Higher plant cells B. Lower plant cells C. Animals cells **D. Both (B) & (C)**

**Text Book Reference; Page #17, Ch#01, 1<sup>st</sup> year**

129. In Saturated fatty acids more hydrogen are not accommodated because of:

**A. Presence of single bonds between carbon atoms.**

B. Presence of Double bonds between carbon atoms.

C. Presence of Double bonds between carbon atoms.

D. Absence of bond between carbon atoms.

**Text Book Reference; Page #44, Ch#02, 1<sup>st</sup> year**

130. A particle executes SHM along a straight line. Its amplitude is A. The potential energy of the particle is equal to the kinetic energy when the displacement of the particle from the mean position is:

A. Zero B.  $\pm A/2$  C.  $\pm A/\sqrt{2}$  **D.  $2A$**

**Text Book Reference; Page #179, Ch#07, 1<sup>st</sup> year**

131. In S.H.M, the fraction of kinetic energy to total energy when displacement is one-half of the Amplitude is

A.  $1/8$  B.  $1/2$  C.  $1/4$  **D.  $3/4$**

**Text Book Reference; Page #179, Ch#07, 1<sup>st</sup> year**

**Hints:  $K.E = \frac{1}{2}k(\dot{x}^2 - x^2)$  (As  $x = \dot{x}^2/2$ )**

**$K.E = \frac{1}{2}k(\dot{x}^2 - (\dot{x}^2/2)^2) = \frac{1}{2}k(\dot{x}^2 - (\dot{x}^2/4)) = \frac{1}{2}k(4\dot{x}^2 - \dot{x}^2/4) = \frac{1}{2}k(3\dot{x}^2/4) = 3/4(1/2k\dot{x}^2)$**

(As  $T.E = \frac{1}{2} k x^2$ ) Thus  $K.E = \frac{3}{4} (T.E)$

132. Laplace corrected Newton's formula for the velocity of sound in gas because the sound propagates:  
2017-132 Med

A. As longitudinal **B. Adiabatically** C. Isothermally D. Under isobaric conditions.

**Text Book Reference; Page #205, Ch#08, 1<sup>st</sup> year**

133. Rhizobium belongs to:

A. Beta-protobacteria B. Gamma-protobacteria **C. Alpha-protobacteria**  
D. Delta-protobacteria

**Text Book Reference; Page #133, Ch#06, 1<sup>st</sup> year**

134. Poisonous red-tides in coastal area are caused by the blooms

A. Euglenoids B. Rhodophyta C. Diatoms **D. Dinoflagellates**

**Text Book Reference; Page #165, Ch#07, 1<sup>st</sup> year**

135. Two bodies are dropped from different heights  $h_1$  and  $h_2$ . Their ratio of the times taken by them to reach the ground will be:

A.  $h_2^2 : h_1^2$  B.  $h_1 : h_2$  **C.  $\sqrt{h_1} : \sqrt{h_2}$**  D. None of the above

**Text Book Reference; Page #60, Ch#03, 1<sup>st</sup> year**

136. A bullet of mass  $m$  moving with a velocity  $v$  is fired into a large wooden block of mass  $M$ . If the bullet remains embedded in the wooden block, the velocity of the system will be:

A.  $\frac{M}{M+m} v$  **B.  $\frac{m}{M+m} v$**  C.  $\frac{M}{M-m} v$  D.  $\frac{m}{M-m} v$

**Text Book Reference; Page #60, Ch#03, 1<sup>st</sup> year**

137. A particle is moving with a constant speed along a straight line. A force is NOT required to:

A. Increased speed B. Decreased the momentum  
C. Change the direction **D. Keep it moving with uniform velocity**

138. He is grieving \_\_\_\_\_ his deceased father.

**A. at** B. for C. on D. over

139. Which of the following atoms in the given oxidation state have the highest electronegativity.

**A. Mo(II)** B. Mo(III) C. Mo(V) D. Mo(VI)

140. The existence of  $H_2^{2+}$  is not possible because

- A. It would be disproportion B. It would be ratio active  
C. It violates the pauli exclusion principle **D. No H-H bond would form**

**Text Book Reference; Page #86, Ch#03, 1<sup>st</sup> year**

141. Choose the anisotropic behavior

- A. Coefficient of thermal expansion** B. Lattice energy C. Viscosity  
D. Infrared spectroscopy

**Text Book Reference; Page #171, Ch#06, 1<sup>st</sup> year**

142. Acetabularia mediterranea is:

- A. A fungus **B. An algae** C. A protozoan D. A prokaryote

**Text Book Reference; Page #176, Ch#21, 2<sup>nd</sup> year**

143. Excess of  $\text{Ag}_2\text{CrO}_4$  was dissolved in distilled water its solubility was found to be  $1.3 \times 10^{-4} \text{ mol dm}^{-3}$ . What is the solubility product:

- A.  $K_{sp} = [1.3 \times 10^{-4}]^2 [1.3 \times 10^{-4}]$  **B.  $K_{sp} = [2.6 \times 10^{-4}]^2 [1.3 \times 10^{-4}]$**   
C.  $K_{sp} = [1.3 \times 10^{-8}] [1.3 \times 10^{-4}]$  D.  $K_{sp} = [1.3 \times 10^{-8}]^2 [1.3 \times 10^{-4}]^2$

**Text Book Reference; Page #143, Ch#07, 1<sup>st</sup> year**

144. Double fertilization occurs in:

- A. Pinus **B. Ferns** C. Marchantia D. Maize

**Text Book Reference; Page #206, Ch#08, 1<sup>st</sup> year**

145. Most conspicuous sea-weeds are:

- A. Red-algae B. Blue-algae C. Green-algae **D. Brown-algae**

**Text Book Reference; Page #166, Ch#07, 1<sup>st</sup> year**

146. An acinus is composed of:

- A. 10-20 Acinars **B. 20-40 Acinars** C. 20-30 Acinars D. 30-40 Acinars

**Text Book Reference; Page # 314, Ch#11, 1<sup>st</sup> year**

147. A circular disc of mass M and radius R is rotating about it's with uniform speed v. Its kinetics energy is:

- A.  $Mv^2$  B.  $\frac{1}{2} Mv^2$  **C.  $\frac{1}{4} Mv^2$**  D.  $\frac{1}{8} Mv^2$

**Text Book Reference; Page # 124, 128 Ch#05, 1<sup>st</sup> year**

148. Moment of inertia of an object does not depend upon:

A. Mass of object **B. Mass of distribution** C. Angular velocity D. Axis of rotation

**Text Book Reference; Page # 123 Ch#05,1<sup>st</sup> year**

149. A body of mass 10 kg is hanging from a spring inside a lift. If the lift falls with an acceleration  $10\text{ms}^{-2}$  then what will be the reading of spring balance:

**A. Zero** B. 2.5 kg C. 5 kg D. 10 kg

**Text Book Reference; Page # 137 Ch#05,1<sup>st</sup> year**

150. That a driver swerves in order to avoid an accident can be proven by examining the marks on the pavements.

(The underlined word nearly means)

A. Stops quickly **B. Turns sharply** C. Hits something else D. Goes backward

151. A container is having mixture of gases, 20% ammonia, 30% hydrogen and 50% oxygen under 50 a.t.m pressure choose the correct partial pressure respectively:

A. 10 atm, 25 atm, 15 atm **B. 10 atm, 15 atm, 25 atm**

C. 25atm, 10 atm, 15 atm D. 15 atm, 25 atm, 10 atm

152. A man walk for some time with velocity  $v$  due east. Then he walks for same time with velocity  $v$  due north . The average velocity for man is:

A.  $2v$  B.  $\sqrt{2}v$  C.  $v$  **D.  $\frac{v}{\sqrt{2}}$**

Hints: Given  $v_1 \Rightarrow \text{East}$  &  $v_2 \Rightarrow \text{West}$

Now to find average velocity  $= \frac{2v_1 v_2}{v_1 + v_2} = \frac{2v^2}{2v} = v$

153. The Sum of 2 forces acting at a point is 16N. If the resultant force is 8N and its direction is perpendicular to minimum force, then the force is:

**A. 6N and 10N** B. 8N and 8N C. 4N and 12N

**Text Book Reference; Page # 48 Ch#02,1<sup>st</sup> year**

154. A boy walks to his school at a distance of 6km with a speed of 3km/h and walks back with a constant speed of 2km/h. His average speed for round trip in km/h is:

**A. 2.5** B. 2.4 C. 5 D. 2.3

155. Though Aleem is poor \_\_\_\_\_ he is honest.

A. but B. nevertheless **C. yet** D. still

156. Which cation is unstable in aqueous solution?

- A.  $\text{Sb}^{3+}$  **B.  $\text{Bi}^{3+}$**  C.  $\text{Sn}^{3+}$  D.  $\text{Fe}^{3+}$

157. Choose the incorrect statement about corrosion:

- A. Corrosion cannot be eliminated completely.  
**B. Employing modern techniques corrosion can be completely eliminates.**  
C. Corrosion process can be slowed down by certain methods.  
D. The presence of acidic oxide in the environment can accelerate the process of corrosion.

**Text Book Reference; Page #347,348 Ch#12, 2<sup>nd</sup> year**

158.  $\text{AlBr}_3$  which is used in the alkylation of benzene possesses the properties of:

- A. A catalyst B. A Lewis acid C. An electron deficient specie **D. All of the above**

**Text Book Reference; Page #124,168,169 Ch#16, 2<sup>nd</sup> year OR Page#221,222 Ch#8 1<sup>st</sup> Year**

159. 2-FADH<sub>2</sub> can yield energy:

- A. **4 ATP** B. 8 ATP C. 6 ATP D. 10 ATP

**Text Book Reference; Page # 94, Ch#04,1<sup>st</sup> year**

160. ABO Blood groups are an example of:

- A. Multiple alleles and incomplete dominance B. Co dominance and incomplete dominance  
C. Incomplete dominance only **D. Multiple alleles and co dominance**

**Text Book Reference; Page # 202,203, Ch#22,2<sup>nd</sup> year**

161. In a mating between two individuals those are heterozygous for a recessive lethal allele. What genotypic ratio (homozygous dominant : heterozygous : homozygous recessive) would you expect to observe in the offspring?

- A. 1:2:1** B. 3:1:1 C. 1:2:0 D. 0:2:1

**Text Book Reference; Page # 194, Ch#22,2<sup>nd</sup> year**

162. How much kinetic energy will be gained by an (alpha) particle ion going from a point at 70 V to another point at 50 V ?

- A. 40 eV** B. 40 KeV C. 40 MeV D. Zero

**Text Book Reference; Page #29,38 Ch #11,2<sup>nd</sup> years**

**Hints:  $\Delta K.E = q\Delta V = 2 \times 20V = 40 \text{ eV}$**

163. The potential of the two plates of a capacitor are +10 V and -10 V the charge on one of the plates is 40C . The capacitance of the capacitor is :

- A. 2 F** B. 4 F C. 0.5 F D. 0.25 F

164. In a simple electrical circuit the current in a resistor is measured as  $(2.50 \pm 0.05)$  mA. The resistor is marked as having a value of  $4.7 \pm 2\%$ . If these value were used to calculate the power dissipated in the percentage uncertainty in the value obtained ?

- A. 2%      B. 4%      **C. 6**      D. 8%

165. Choose the synonym for the word "ABRIDGE".

- A. To make a bridge      **B. Shorten**      C. Magnify      D. Divert

166. Choose the True product of the following reaction?



- A.  $\text{CH}_3\text{COOH} + \text{NH}_3$  **B.  $\text{CH}_3\text{COOH} + \text{NH}_4\text{Cl}$**  C.  $\text{CH}_3\text{COCl} + \text{NH}_3$  D.  $\text{CH}_3\text{CONH}_2$

**Text Book Reference; Page#309 Ch#20, 2<sup>nd</sup> year**

167. Which polyatomic anion is unstable in solution ?

- A.  $\text{BO}_2^-$       B.  $\text{SnO}_3^{2-}$  **C.  $\text{S}_2\text{O}_3^{4-}$**       D.  $\text{MnO}_4^{2-}$

168. Choose the molecule that could not be represented by single electronic structure formula:

- A.  $\text{CH}_4$  B.  $\text{H}_2\text{O}$       **C.  $\text{SO}_2$**       D.  $\text{O}_2$

169.  $\text{Alkene} + \text{O}_3 \rightarrow \text{Ozonide}$  " $\text{Zn} + \text{H}_2\text{O}$ "  $\rightarrow$  Propanone + Propanal, The IUPAC name of alkene is:

- A. Hex-2-ene      B. Hex-3-ene      C. 2-methyl pent-1-ene      **D. 2-methyl pent-2-ene**

**Text Book Reference; Page # 266, 267, Ch#19, 1<sup>st</sup> year OR Page#136, Ch#16**

170. If a new born baby possess carboxy hemoglobin instead of the oxyhemoglobin, the condition may be:

- A. Embolism      B. Atherosclerosis      **C. Cyanosis**      D. Arteriosclerosis

**Text Book Reference; Page # 347, Ch#12, 1<sup>st</sup> year**

171. Of 100 ml of arterial blood, oxygen provided to the tissues is:

- A. 2ml      B. 3ml      C. 4ml      **D. 5ml**

**Text Book Reference; Page # 10, Ch#14, 2<sup>nd</sup> year**

172. Nervous system that prepare itself for fight or flight:

- A. Para sympathetic**      B. Sympathetic      C. Somatic      D. Peripheral

**Text Book Reference; Page # 104, Ch#17, 2<sup>nd</sup> year**

173. In a stream lined flow the velocity of the liquid in contact with the containing vessel is:

- A. Zero      **B. Minimum but not zero**      C. Large      D. Peripheral



174. Eight drops of water, each radius 2mm are falling through air at a terminal velocity of 8cm s<sup>-1</sup>. If they coalesce to form a single drop the terminal velocity of the combined drop will be:

- A. 8 cms<sup>-1</sup>      B. 16 cms<sup>-1</sup>      C. 24 cms<sup>-1</sup>      **D. 32 cms<sup>-1</sup>**

**Text Book Reference; Page # 165, Ch#06, 1<sup>st</sup> year**

**Hints:  $V_t = n^{2/3} V_{t0}$  Here n=no. of drops**

**Thus ;  $V_t = (8)^{2/3} V_{t0} = 4V_{t0} = 4 \times 8 = 32 \text{ cms}^{-1}$**

175. The frequency of a second's pendulum is :

- A. 1 Hz      B. 2 Hz      C. 5Hz      **D. None of the above.**

176. It is a general perception that doctors have a callous disregard for feeling of others;

(The underlined word nearly means)

- A. Respectable      B. Careful      **C. Unfeeling**      D. Sensitive

177. The Ratio of electro force between two protons to that between two electrons is of the order of:

- A.  $10^{42}$       B.  $10^{39}$       C.  $10^{36}$       **D. 1**

178. When  $10^{12}$  electrons are received from a neutral metal sphere. The charge on the sphere becomes:

- A. 0.16uc**      B. -0.16uc      C. 0.32uc      D. -0.32uc

179. An electric charge in an accelerated motion produce:

- A. An electric field only      B. A magnetic field only  
C. Electromagnetic radiation only      **D. All of the above**

180. Choose the synonym for the word "ATTENUATE".

- A. Appear      B. Be absent      **C. Weaken**      D. Testify

181. At standard conditions 45 liters of oxygen gas weight about 64 g, where as 45 liters of hydrogen weight only 4g. Which gas diffuse faster ? Calculate how much faster .

- A. Hydrogen,  $4 \times O_2$       B. Hydrogen,  $2 \times O_2$       **C. Oxygen,  $8 \times H_2$**       D. Oxygen,  $3 \times H_2$

182. Arrange the following oxide of chromium in increasing acidic character:

- A.  $CrO > Cr_2O_3 > CrO_3$       **B.  $CrO_3 > Cr_2O_3 > CrO$**       C.  $Cr_2O_3 > CrO > CrO_3$

- D.  $CrO_3 > CrO > Cr_2O_3$

**Text Book Reference; Page # 62 Ch#14, 2<sup>nd</sup> year**

183. Choose Mercaptans of the following:

- A. R-S-R    **B. R-S-H**    C. R-O-R    D. R-O-H

184. If black and white true breeding mice are mated and they result is all gray offspring, what inheritance pattern would this be indicative of ?

- A. Dominance    B. Co dominance    C. Multiple alleies    **D. Incomplete dominance**

**Text Book Reference; Page # 201, Ch#22, 2<sup>nd</sup> year**

185. The rules forbid passenger to cross the railway line.

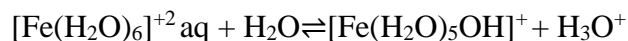
A. Passenger was forbidden by the rules to cross the railway line.

B. Passenger are being forbidden by the rules to cross the railway line.

**C. Passengers are forbidden by the rules to cross the railway line.**

D. Passenger is forbid by the rules to cross the rail way line.

186. Many hexaaqua complex ions can undergo reaction with water as given below



The reaction is classed as:

- A. Redox reaction    B. Acid base reaction    **C. Decomposition reaction**    D. Substitution reaction

**Text Book Reference; Page # 73 Ch#14, 2<sup>nd</sup> year**

187. Propene reacts with hypochlorous acid to form

- A.  $\text{CH}_3\text{-CH-CH}_2\text{O}$     **B.  $\text{CH}_3\text{-CH-CH}_2\text{Cl}$**     C.  $\text{CH}_3\text{-CH-CH}_2\text{Cl}$     D.  $\text{CH}_3\text{-CH-CH}_2$



**Text Book Reference; Page # 135, Ch#16, 2<sup>nd</sup> year**

188. Which of the following radiations cannot cause excitation in the molecule ?

- A. Red Colour    B. Green Colour    C. Ultra Violet    **D. None of the above**

189. Which of the following do not play a role in intra cellular movement?

A. Microfilament and inter mediate filaments.    B. Microfilaments and microtubules.

**C. Inter mediate filaments and micro tubules**    D. only microfilaments

**Text Book Reference; Page # 17, Ch#1, 1<sup>st</sup> year**

190. Which statement about thylakoids in eukaryotes is not correct ?

A. Thylakoids are assembled into stacks

**B. Thylakoids exist as a maze of folded membranes.**

C. The space surrounding thylakoids is called stroma.

D. Thylakoids contain chlorophyll.

**Text Book Reference; Page # 20,21 Ch#1) OR (Page#77, Ch#4)1<sup>st</sup> year**

191. The three non-infective genes in HIV are;

A. gag, pol, rev      B. gag, pol, vpu      C. gag, pol, vpr      **D. gag, pol, env**

**Text Book Reference; Page # 108, Ch#5,1<sup>st</sup> year**

192. A bomb explodes on the moon. How long will it take for the sound to reach the earth:

A. 10 sec      B. 1000 sec      C. 1 day      **D. None of the above**

193. Macronutrients are:

**A. K-Mg-N-P**      B. Cu-Mg-Mn-S      C. Mn-S-P-Cu      D. Mg-Mn-Ca-P

**Text Book Reference; Page # 260, Ch#10,1<sup>st</sup> year**

194. Sphagnum is also called as:

A. Sphenopsida      **B. Peat Moss**      C. Club moss      D. Maiden hair ferns

**Text Book Reference; Page # 191, Ch#8,1<sup>st</sup> year**

195. A body of mass 2kg collides with a wall with speed  $100 \text{ m s}^{-1}$  and rebounds with the same speed the force exerted on the wall is  $2 \times 10^4 \text{ N}$ . The time of contact is:

**A. 1/50 Sec**      B. 1/25 Sec      C. 1/60 Sec      D. 1 Sec

196. An engine pumps out 40kg of water in second. The water comes out of vertically upward with a velocity of  $3 \text{ ms}^{-1}$ , the power of engine in kilowatt is:

**A. 1.2 kW**      B. 12kW      C. 120kW      D. 1200kW

**Text Book Reference; Page # 88, Ch#04,1<sup>st</sup> year**

**Hints:  $P = FV = mgV = 40 \times 10 \times 3 = 1200 = 1.2 \text{ kW}$**

197. Two boys weighting in the ratio 4:5 goes up stair taking time in the ratio 5:4. The ratio of their power is:

**A. 1**      **B. 16/25**      C. 25/16      D. 4/5

**Text Book Reference; Page # 89, Ch#04,1<sup>st</sup> year**

**Hints:  $P_1/P_2 = m_1gh_1/t_1 \times t_2/m_2gh_2$  (Here  $h_2 = h_1 = h$ )**

$$m_1g/t_1 \times t_2/m_2g = 4/5 \times 4/5 = 16/25$$

198. A thrifty buyer purchases fruits and vegetables in season.

(The under lined word nearly means)

A. Carefull B. Professional C. Disinterested D. Healthy

199. 10.0 dm<sup>3</sup> gas cylinder containing mixture of various gases 50cm<sup>3</sup> of nitrogen gas is in the mixture what is the concentration of N<sub>2</sub> gas in part per billion (ppb).

A.  $\frac{50}{1\ 000} \times 10^9$  B.  $\frac{50}{10000} \times 10^9$  C.  $\frac{50}{1\ 00000} \times 10^6$  D.  $\frac{50}{1\ 000} \times 10^6$

**Text Book Reference; Page # 213, Ch#10, 1<sup>st</sup> year**

200. Consider the following reactions



Choose the catalysts employed for the reaction.

A. Ni for both reactions (i) and (ii)      B. Fe<sub>2</sub>O<sub>3</sub> for both the reactions (i) and (ii)

C. Ni for the reaction (i) and Fe<sub>2</sub>O<sub>3</sub> for (ii)      D. Fe<sub>2</sub>O<sub>3</sub> for the reaction (i) and Ni (ii)

**Text Book Reference; Page # 71, Ch#14, OR Page#132, Ch#16, 2<sup>nd</sup> year OR page#202, Ch#07**