1) **When viewed in high magnification, each _____ is seen to contain a large number of myofibrils:**
A) Muscle bundle C) Myofilament
B) Sarcomere D) Muscle fibre
○ A ○ B ○ C ○ D

2) **The H-zone is bisected by dark line called:**
A) I-band C) A-line
B) M-line D) Z-line
○ A ○ B ○ C ○ D

3) **The central thick filaments extend the entire length of the:**
A) A band C) Thin filament
B) I band D) H zone
○ A ○ B ○ C ○ D

4) **Cytoplasm of the muscle is known as:**
A) Axoplasm C) Sarcolemma
B) Sarcoplasm D) Protoplasm
○ A ○ B ○ C ○ D

5) **The cytoplasm of the muscle cell contains large amount of stored _____ and _____:**
A) Glycogen, Myosin C) Starch, Myoglobin
B) Glycogen, Hemoglobin D) Glycogen, Myoglobin
○ A ○ B ○ C ○ D

6) **Overlapping of thick and thin filaments occurs in:**
A) I-band C) M-band
B) A-band D) Z-band
○ A ○ B ○ C ○ D

7) **Which one of the following changes occur when skeletal muscle contracts?**
A) I-band shortens only
B) A band shortens and Z-lines move further apart
C) I-band shortens and Z-lines get closer
D) Actin filament contracts
○ A ○ B ○ C ○ D

8) **Which one of the following part of sarcomere is isotropic?**
A) I band C) H zone
B) A band D) Z line
○ A ○ B ○ C ○ D

9) **It is a red pigment that stores oxygen in muscle cell:**
A) Hemoglobin C) Myosin
B) Myoglobin D) Actin
○ A ○ B ○ C ○ D

10) **Pick up the diameter of a myofibril:**
A) 10-100 µm C) 16-18 µm
B) 1-2 µm D) 7-8 µm
○ A ○ B ○ C ○ D

11) It cannot polarize visible light:

A) A-band of sarcomere C) H-band of sarcomere
B) I-band of sarcomere D) M-line of sarcomere

○ A ○ B ○ C ○ D

12) When muscle fibre contracts all of the following events occur, EXCEPT:

A) Z-line is brought closer C) H-zone disappears
B) I-band shortens D) A-band shortens

○ A ○ B ○ C ○ D

13) Generally, each end of the entire skeletal muscle is attached to bone by:

A) Ligament C) Tendon
B) Sarcomere D) Collagen

○ A ○ B ○ C ○ D

14) These muscles are primarily involved in locomotory actions and changes of body postures:

A) Smooth C) Skeletal
B) Cardiac D) Unstriped

○ A ○ B ○ C ○ D

15) Twisting around the actin chains there are two strands of another protein:

A) Myosin C) Troponin
B) Tropomyosin D) Myoglobin

○ A ○ B ○ C ○ D

16) Sarcomeres are part of:

A) Muscle fibres C) Myofilaments
B) Myofibrils D) Myonemes

○ A ○ B ○ C ○ D

17) A structural protein that with myosin carries out contraction; also called microfilaments is:

A) Fibrin C) Actin
B) Troponin D) Tropomyosin

○ A ○ B ○ C ○ D

18) Cyclic activity of cross bridges is regulated by:

A) Ca^{+2} ions C) Troponin
B) ATP D) Actin

○ A ○ B ○ C ○ D

19) The thick filament is about _____ nm in diameter:

A) 8 C) 10
B) 7 D) 16

○ A ○ B ○ C ○ D

20) Cross bridges are the lateral processes (projection) on:

A) Actins C) Troponins
B) Tropomyosins D) Myosins

○ A ○ B ○ C ○ D

21) When cross bridges contract they pull the actin filament towards the?

A) Centre of the sarcomere C) Right side of the sarcomere
B) Ends of the sarcomere D) Left side of the sarcomere

○ A ○ B ○ C ○ D

22) Stiffening of body due to lack of ATP is called:

A) Tetany
B) Cramp
C) Rigor mortis
D) Tetanus

○ A ○ B ○ C ○ D

23) _____ tail consists of two long polypeptide chains coiled together:

A) Troponin
B) Tropomyosin
C) Actin
D) Myosin

○ A ○ B ○ C ○ D

24) Twisting around the actin chains are two strands of another protein:

A) Troponin
B) Tropomyosin
C) Myosin
D) Myoglobin

○ A ○ B ○ C ○ D

25) T-tubule and the terminal portion of the adjacent envelope of sarcoplasmic reticulum form:

A) Z-line
B) Triads
C) H-zone
D) T-system

○ A ○ B ○ C ○ D

26) The sarcolemma of muscle fibre folds inwards and forms a system of tubes running through the sarcoplasm which is called:

A) Myofilament
B) Sarcoplasmic reticulum
C) Z-lines
D) Transverse tubules

○ A ○ B ○ C ○ D

27) When more energy is required in muscle contraction then that energy can also be produced by?

A) Glucose
B) Creatine phosphate
C) Glycogen
D) Lactic acid

○ A ○ B ○ C ○ D

28) Lactic acid accumulation in skeletal muscles causes:

A) Muscle fatigue
B) Tetany
C) Atrophy
D) Cramp

○ A ○ B ○ C ○ D

29) Complete immobilization of muscle leads to:

A) Muscle fatigue
B) Muscle atrophy
C) Cramp
D) Tetany

○ A ○ B ○ C ○ D

30) Skeletal muscles are:

A) Unstriped
B) Voluntary
C) Involuntary
D) Earliest

○ A ○ B ○ C ○ D

31) Which ion is essential for muscle contraction?

A) Sodium
B) Calcium
C) Potassium
D) Magnesium

○ A ○ B ○ C ○ D

32) Sliding filament theory can be best explained as:

32) **Sliding filament theory can be best explained as:**
A) Actin and myosin filaments do not shorten but rather slide pass each other
B) When myofilaments slide pass each other, myosin filaments do not shorten
C) When myofilaments slide pass each other actin filaments shorten while myosin filaments do not shorten
D) Actin and myosin filaments shorten and slide pass each other

○ A ○ B ○ C ○ D

33) **What is sarcomere?**
A) Part between two H-lines C) Part between two I-bands
B) Part between two A-lines D) Part between two Z-lines

○ A ○ B ○ C ○ D

34) **Immediate source of energy for muscle contraction is:**
A) ATP C) Creatine phosphate
B) Glucose D) Sucrose

○ A ○ B ○ C ○ D

35) **In skeletal muscle under anaerobic conditions ATP can be generate by:**
A) Krebs cycle C) Glycolysis
B) ETC D) Pyruvic acid oxidation

○ A ○ B ○ C ○ D

36) **The contraction of each muscle fiber is based on:**
A) All or none principle C) All or two principle
B) All or one principle D) All or three principle

○ A ○ B ○ C ○ D

37) **Sarcoplasmic reticulum is continuous system of sarco-tubules extending throughout the sarcoplasm around the:**
A) Muscle fibers C) Myofibrils
B) Sarcomere D) Thick filaments

○ A ○ B ○ C ○ D

38) **When muscles are used actively, capillaries surrounding the muscle fibres, as well as mitochondria within them increase in number and fiber synthesizes more:**
A) Glycogen C) Hemoglobin
B) Calcium D) Myoglobin

○ A ○ B ○ C ○ D

39) **Triceps and biceps are examples of _____ muscles:**
A) Smooth C) Cardiac
B) Skeletal D) Antagonistic

○ A ○ B ○ C ○ D

40) **Each light band of sarcomere is called:**
A) A band C) H zone
B) I band D) Z line

○ A ○ B ○ C ○ D

41) **Term Zwishen stands for:**
A) Bright C) Top
B) Between D) Bottom

○ A ○ B ○ C ○ D

42) **Myofilament is made up of:**
A) Actin filament only
B) Thick filament only
C) Thin filament only
D) Thick and thin filament both

○ A ○ B ○ C ○ D

43) **_____ is the end of muscle which remain fixed when muscle contracts:**
A) Insertion
B) Origin
C) Belly
D) Tendon

○ A ○ B ○ C ○ D

44) **The actin molecule has _____ chains:**
A) Two
B) Three
C) Four
D) Five

○ A ○ B ○ C ○ D

45) **When muscle is required to contract calcium ions bind with?**
A) Actin
B) Myosin
C) Troponin
D) Tropomyosin

○ A ○ B ○ C ○ D

46) **_____ is needed to break the link between the myosin bridge and the actin:**
A) NAD
B) ATP
C) Calcium
D) Myoglobin

○ A ○ B ○ C ○ D

47) **Sarcolemma is present around:**
A) Myofilament
B) Myofibril
C) Muscle cell
D) Muscle bundle

○ A ○ B ○ C ○ D

48) **Thin myofilaments consist of:**
A) Actin, Myosin, Troponin
B) Actin, Tropomyosin, Troponin
C) Actin, Tropomyosin, Hemoglobin
D) Actin, Myoglobin, Troponin

○ A ○ B ○ C ○ D

49) **It refers to a condition of the body after death, which is characterized by stiffness of body?**
A) Cramp
B) Tetany
C) Rigor mortis
D) Spasm

○ A ○ B ○ C ○ D

50) **Stimulation of a muscle fiber by a motor neuron occurs at:**
A) The neuromuscular junction
B) The transverse tubules
C) The myofibril
D) The sarcoplasmic reticulum

○ A ○ B ○ C ○ D

PREVIOUS | FINISH TEST | NEXT

51) **The reactivity of halogens with alkanes falls in the order of:**

A) $I_2 < F_2 < Cl_2 < Br_2$
B) $I_2 < Cl_2 < F_2 < Br_2$
C) $F_2 < Cl_2 < Br_2 < I_2$
D) $I_2 < Br_2 < Cl_2 < F_2$

○ A ○ B ○ C ○ D

52) **Consider the following statements:**

I. Markownikov's rule is sometimes phrased "the richer get richer"
II. Substituents in IUPAC system are listed in alphabetical order
III. The main molecular forces present in alkenes are Van der Waal's forces
IV. Alkenes are prepared in the laboratory by dehydration of alcohols

Which of the above statements is/are correct?

A) I only
B) II only
C) III and IV
D) I, II, III and IV

○ A ○ B ○ C ○ D

53) **Catalytic hydrogenation of alkenes is used:**

A) For manufacture of vegetable ghee from vegetable oil in the industry only
B) As a synthetic as well as analytical tool in the laboratory only
C) Both 'A' and 'B'
D) Neither 'A' nor 'B'

○ A ○ B ○ C ○ D

54) **Which of the following reaction shows free radical substitution reaction?**

A) Nitration of benzene in the presence of conc. H_2SO_4 at 50 – 55°C
B) Chlorination of benzene in the presence of $FeCl_3$
C) Hydrogenation of benzene in the presence of Ni at 200°C
D) Chlorination of toluene in the presence of sunlight

○ A ○ B ○ C ○ D

55) **Which of the following is not use of methane? It is used:**

A) As a fuel
B) For the preparation of carbon black which is used in paints, printing inks and automobile tyres
C) For the manufacture of urea fertilizer
D) As a general anesthetic substance

○ A ○ B ○ C ○ D

56) **Benzene does not undergo:**

A) Polymerization process only
B) Elimination reaction only
C) Both 'A' and 'B'
D) Neither 'A' nor 'B'

○ A ○ B ○ C ○ D

57) **Which of the following is not correct name according to IUPAC system of the given structures?**

A)  2-Aminobenzaldehyde
B)  3-Chloroiodobenzene
C)  ..... 3-Hydroxybenzoic acid
D)  2-Nitrobromobenzene

○ A ○ B ○ C ○ D

58) **Consider the following reaction:**

Ethyl alcohol $\xrightarrow{\text{conc. } H_2SO_4} X \xrightarrow[CCl_4]{Br_2} Y \xrightarrow[KOH]{\text{alcoholic}} Z$

Which of the following is correct sequence for the product shown as: X, Y, Z?

A) Ethene, 1,2-Dibromoethane, Ethyne
B) Ethane,1,2-Dibromoethene, Ethyne
C) Ethyne, 1,2-Dibromoethene, Ethane
D) Ethyne, ethane, 1,2-Dibromoethane

○ A ○ B ○ C ○ D

59) **Bromine reacts with ethene to form 1,2-dibromoethane:**
What is the correct description of the organic intermediate in this reaction?
A) It has a negative charge
B) It is a free radical
C) It is a nucleophile
D) It is an electrophile

○ A ○ B ○ C ○ D

60) **Polymerization of ethene gives polythene:**
How does the carbon-carbon bond in polythene compare with that in ethene?
A) The carbon-carbon bond is longer and stronger in polythene
B) The carbon-carbon bond is longer and weaker in polythene
C) The carbon-carbon bond is shorter and stronger in polythene
D) The carbon-carbon bond is shorter and weaker in polythene

○ A ○ B ○ C ○ D

61) **Incomplete oxidation of methane occurs in a limited supply of oxygen or air and results in the formation of:**
A) CO + C
B) CO_2 + CO
C) CO_2 + C
D) C + H_2O

○ A ○ B ○ C ○ D

62) **Identify the correct statement for the reactions of benzene:**
A) Reduction of benzene with H_2 gas in the presence of Ni at 200°C act as a catalyst to form cyclohexane
B) Bromination of benzene in the presence of sunlight to form 1,2,3,4,5,6-Hexabromocyclohexane
C) Both A and B
D) Neither A nor B

○ A ○ B ○ C ○ D

63) **Which of the following are optimum conditions in order to get good quality of polythene as a result of polymerization of ethene?**
I. Temperature 400°C
II. Pressure 100atm
III. Amount of oxygen 0.1%
IV. Catalyst $Al(C_2H_5)_3$ + $TiCl_4$
A) I and II only
B) I, II and III
C) I, III and IV
D) I, II, III and IV

○ A ○ B ○ C ○ D

64) **When purely alcoholic solution of sodium/potassium hydroxide and halogenoalkanes are treated, an alkene is formed. What we call this reaction?**
A) β-Elimination
B) Dehydration
C) Debromination
D) Reduction of benzene

○ A ○ B ○ C ○ D

65) **Aromatic hydrocarbons are derivatives of:**
A) Normal series of paraffins
B) Alkenes
C) Benzene
D) Cyclohexane

○ A ○ B ○ C ○ D

66) **Alkanes are known as paraffins, which means that they are least reactive. Which of the following is not cause of their least reactivity?**
A) In sigma bond the electrons are very tightly held between the nuclei
B) Electronegativity difference between C and H in alkane is less than 0.5
C) They can act as electrophiles
D) Non-polarity of bonds

○ A ○ B ○ C ○ D

67) **During nitration of benzene, the active nitrating agent is:**
A) N_2O
B) NO_2^+
C) NO_2
D) HNO_3

○ A ○ B ○ C ○ D

68) **Which of the following is more reacting substance?**
A) Ethane
B) Ethene
C) Methane
D) Acetylene

○ A ○ B ○ C ○ D

69) **In benzene electrons are delocalized making it a very stable molecule.**
Greater is the resonance energy, greater is the stability.
The resonance energy of benzene is:

A) $-150.5 kJmol^{-1}$ C) $-358 kJmol^{-1}$
B) $+150.5 kJmol^{-1}$ D) $+358 kJmol^{-1}$

○ A ○ B ○ C ○ D

70) **The introduction of ($H-\overset{O}{\overset{\|}{C}}^{-}$) group in benzene is called:**

A) Alkylation C) Acetylation
B) Formylation D) Carbonyl reduction

○ A ○ B ○ C ○ D

71) **Which of the following reactions will yield 2-Bromopropane?**

A) $CH_3-C\equiv CH+2HBr$ C) $CH\equiv CH+2HBr$
B) $CH_3-C\equiv CBr+HBr$ D) $CH_3-CH=CH_2+HBr$

○ A ○ B ○ C ○ D

72) **Which of the following is resonance hybrid structure of benzene?**

A)  C) 

B)  D) 

○ A ○ B ○ C ○ D

73) **$AlCl_3$ catalyzes certain reactions by forming carbocation (carbonium ion) with chloroalkane as shown in the following equation:**

$$R-Cl+AlCl_3 \rightarrow R^{+}+AlCl^{-}_{4}$$

This can occur because:

A) $AlCl_3$ is a covalent molecule
B) $AlCl_3$ exist in the dimeric form (Al_2Cl_6)
C) Al-atom in $AlCl_3$ has an incomplete octet of electrons
D) Cl-atom in R-Cl has a vacant p-orbital

○ A ○ B ○ C ○ D

74) **Which one of the following is more stable alkene?**

A) 1-Butene C) Trans-2-Butene
B) Cis-2-Butene D) 1,3-Butadiene

○ A ○ B ○ C ○ D

75) **Benzene is an extra ordinary stable molecule. This stability is due the extensive delocalization of electron cloud. Which of the following methods/techniques does not explain the stability of benzene:**

A) Resonance method
B) Atomic orbital treatment of benzene
C) Crystal field theory
D) Resonance energy

○ A ○ B ○ C ○ D

76) **Which one of the following is a propagation step in the reaction between methane and chlorine?**

A) $Cl_2 \rightarrow 2Cl^{\bullet}$
B) $CH_3^{\bullet}+HCl \rightarrow CH_3Cl+H^{\bullet}$
C) $CH_3^{\bullet}+Cl_2 \rightarrow CH_3Cl+Cl^{\bullet}$
D) $CH_2Cl^{\bullet}+HCl \rightarrow CH_3Cl+Cl^{\bullet}$

○ A ○ B ○ C ○ D

77) **A hydrocarbon, which is liquid at room temperature and decolorizes bromine in the presence of CCl_4 (solvent). What could be the molecular formula of the compound?**

A) C_2H_2 C) C_7H_{16}
B) C_2H_4 D) $C_{10}H_{20}$

○ A ○ B ○ C ○ D

78) **Which reaction is not an electrophilic addition?**

A) $CH_2 = CH_2 + HI \longrightarrow CH_3CH_2I$

B) $CH_3CH = CH_2 + Br_2 \longrightarrow CH_3CHBrCH_2Br$

C) $CH_3CH = CH_2 + H_2O \xrightarrow{\text{conc. } H_2SO_4} CH_3CH(OH)CH_3$

D) $CH_3COCH_3 + HCN \longrightarrow CH_3C(OH)(CH_3)CN$

○ A ○ B ○ C ○ D

79) **The major product obtained when hypochlorous acid is treated with 2-Methyl-1-butene is:**

A) 2-Chloro-1-hydroxy-2-methyl butane
B) 1-Chloro-2-methyl-2-butanol
C) 1-Chloro-3-hydroxy-2-methyl butane
D) 3-Chloro-2-hydroxy-2-methyl butane

○ A ○ B ○ C ○ D

80) **Which of the following is not ortho and para directing group:**

A) $-NH_2$
B) $-OCH_3$
C) $-OH$
D) $-SO_3H$

○ A ○ B ○ C ○ D

81) **Both methane and ethane can be prepared in one step by the reaction of:**

A) C_2H_4
B) CH_3CH_2OH
C) CH_3Br
D) CH_3OH

○ A ○ B ○ C ○ D

82) **Addition of halogen to alkene is an electrophilic addition reaction. Number of steps involved in the mechanism of reaction is/are:**

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

○ A ○ B ○ C ○ D

83) **Which of the following species are 3,5 (meta) directing groups when second group is introduced into the benzene ring?**

I = $-NH_2$
II = -CHO
III = -COOH
IV = $-CH_3$

A) II, III and IV
B) II and III
C) I and IV
D) I, II and IV

○ A ○ B ○ C ○ D

84) **In the reaction of ethene with bromine the intermediate formed is:**

A) CH_2-CH_2 (bridged Br^+)
B) $CH_2-\overset{+}{C}H_2$, Br
C) $CH_2-\bar{C}H_2$, Br
D) CH_2-CH_2 (bridged Br)

○ A ○ B ○ C ○ D

85) **Which of the following tests does not help us to distinguish between alkane (ethane) and alkene (ethene)?**

A) Baeyer's test
B) Ammonical cuprous chloride test
C) Br_2 / CCl_4 test
D) Cl_2 / CCl_4 test

○ A ○ B ○ C ○ D

86) **An electric current of 2 A is passing through a cross section of the coil in 1 second. How many electrons are involved in providing a current of 2 A? The charge on one electron is 1.602×10^{-19} C.**

A) 3.21×10^{18} C) 2.2×10^{16}

B) 1.25×10^{19} D) 6.25×10^{18}

○ A ○ B ○ C ○ D

87) **A student measures a current as 0.25 A. Which of the following correctly expresses this result?**

A) 25 mA C) 25 MA

B) 250 MA D) 250 mA

○ A ○ B ○ C ○ D

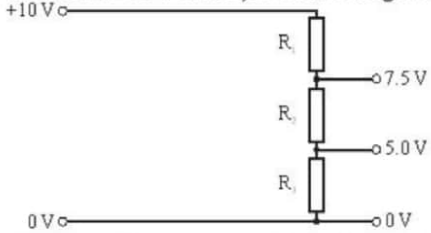
88) **A wire of resistance 48 Ω is bent in the form of an equilateral triangle. The resistance between two vertices is:**

A) 9.7 Ω C) 10.6 Ω

B) 11.9 Ω D) 12.4 Ω

○ A ○ B ○ C ○ D

89) **A potential divider is used to give outputs of 5.0 V and 7.5 V from a 10 V source, as shown in figure:**



Which combination of resistances, R_1, R_2, R_3 gives the correct voltages?

	R_1 (kΩ)	R_2 (kΩ)	R_3 (kΩ)
A)	1	1	2
B)	2	1	2
C)	3	2	2
D)	3	2	3

○ A ○ B ○ C ○ D

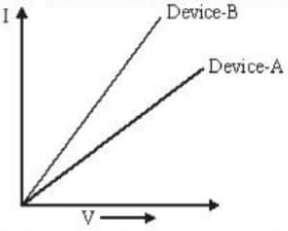
90) **A copper wire of resistance 2R is cut into ten parts of equal length. Two pieces each are joined in series and then five such combinations are joined in parallel. The new combination will have a resistance:**

A) 2R C) $\frac{2R}{5}$

B) $\frac{2R}{25}$ D) $\frac{R}{25}$

○ A ○ B ○ C ○ D

91) **For which device the conductance is greater?**

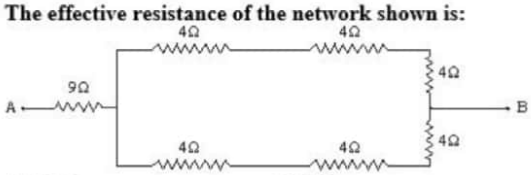


A) Device – A C) Both have same conductance

B) Device – B D) Device – B has zero conductance

○ A ○ B ○ C ○ D

92) **The effective resistance of the network shown is:**



A) 15 Ω C) 7 Ω

B) 21 Ω D) 24 Ω

93) **Three resistances, each of 6 Ω are connected to form a triangle. The resistance between any two terminals is:**

A) 4Ω
B) 8Ω
C) 12Ω
D) 18Ω

○ A ○ B ○ C ○ D

94) **A wire of resistance 4.0 Ω is stretched to twice its original length. The resistance of new wire will be:**

A) 2 Ω
B) 8 Ω
C) 4 Ω
D) 16 Ω

○ A ○ B ○ C ○ D

95) **The resistance of conductor depends on:**

A) Area of cross section of conductor
B) Physical state of conductor
C) Nature of conductor
D) All of these

○ A ○ B ○ C ○ D

96) **A wire of length 10 m and radius 1 mm has a resistance of 3 Ω. What length of a wire of same material but of radius 2 mm will also have a resistance of 9 Ω?**

A) 25 m
B) 60 m
C) 120 m
D) 100 m

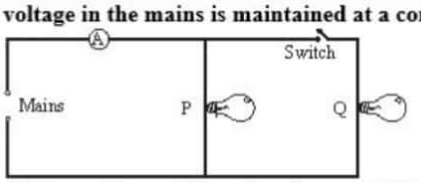
○ A ○ B ○ C ○ D

97) **Which statement describes the electrical potential difference between two points in a wire carrying a current?**

A) The force required to move a unit positive charge between the points
B) The ratio of the energy dissipated between the points to the current
C) The ratio of the power dissipated between the points to the current
D) The ratio of the power dissipated between the points to the charge moved

○ A ○ B ○ C ○ D

98) **How will the reading in the ammeter A of the figure beneath be affected if bulb Q is disconnected from the circuit shown (consider both bulbs to be identical). The voltage in the mains is maintained at a constant value:**



A) The reading will be reduced to one-half
B) The reading will not be affected
C) The reading will be double of previous one
D) The reading will be increased four fold

○ A ○ B ○ C ○ D

99) **Two bulbs one of 35 W, 220 V and other of 70 W, 220 V are connected in parallel across the mains of 220 V. The current:**

A) In 35 W bulb is lesser
B) In 70 W bulb is lesser
C) Is same in both bulbs
D) None of these

○ A ○ B ○ C ○ D

100) **The terminal potential difference of a cell when open circuited is (where "E" is emf of cell):**

A) E
B) $\frac{E}{2}$
C) Zero
D) $\frac{E}{3}$

○ A ○ B ○ C ○ D

101) **The emf of a cell is 6.0 V. When it is short circuited, the current of 3 A flows. The internal resistance of cell is:**

A) 0.25 Ω
B) 0.50 Ω
C) 2.0 Ω
D) 1.0 Ω

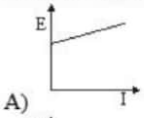
○ A ○ B ○ C ○ D

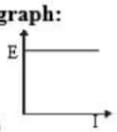
102) **A battery has an emf of 24 V and an internal resistance of 2.5 Ω. When an external 5.5 Ω resistor is connected across the terminals of the battery, the potential difference between the terminals will be:**

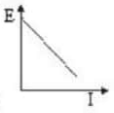
A) 22.5 V
B) 18.5 V
C) 13.5 V
D) 16.5 V

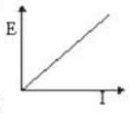
○ A ○ B ○ C ○ D

103) **The emf "E" of a cell varies with the current drawn from the cell according to the graph:**

A) 

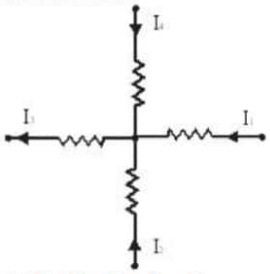
C) 

B) 

D) 

○ A ○ B ○ C ○ D

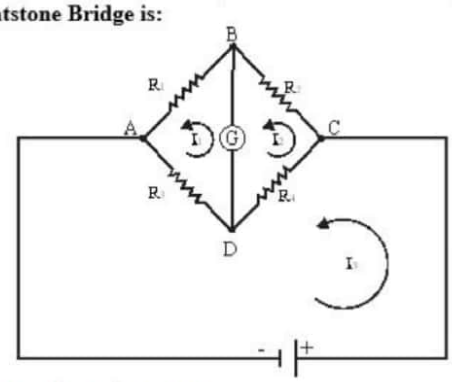
104) **Which of following is correct expression for figure shown below?**



A) $I_1+I_2-I_3-I_4=0$
B) $I_1-I_3-I_2+I_4=0$
C) $I_1+I_2=I_4+I_3$
D) $I_1+I_2=I_3-I_4$

○ A ○ B ○ C ○ D

105) **The KVL – equation for loop ABDA in the following Wheatstone Bridge is:**



A) $-I_1R_1-(I_1-I_2)R_g-I_1R_3=0$
B) $-I_1R_1-(I_2-I_1)R_g-I_3R_3=0$
C) $-I_1R_1-(I_1-I_2)R_g-(I_1-I_3)R_3=0$
D) None of these

○ A ○ B ○ C ○ D

106) **Conventionally speaking the current flowing towards a point is taken as _____ and the voltage of a battery in which current is traversed from high to low potential is taken as _____.**

A) Positive, positive
B) Positive, negative
C) Negative, Positive
D) Negative, Negative

○ A ○ B ○ C ○ D

107) **"The sum of all the currents meeting at a point in the circuit is zero", is a statement of:**

A) KCL
B) KVL
C) Ohm's law
D) Wheatstone Bridge

○ A ○ B ○ C ○ D

108) **The resistance of hot tungsten filament is about 10 times more than the resistance of cold tungsten filament. What will be the resistance of 100 W and 200 V lamp when not in use?**

A) 40 Ω
B) 20 Ω
C) 400 Ω
D) 200 Ω

○ A ○ B ○ C ○ D

109) **Ohm's Law is valid when the temperature of the conductor is:**

A) Constant
B) Very low
C) Very high
D) Changing

○ A ○ B ○ C ○ D

110) **A potential difference of 10 V is applied across a conductance of 4 mho. The current in the conductor is:**

A) 40 A
B) 2.4 A
C) 2.5 A
D) 3.0 A

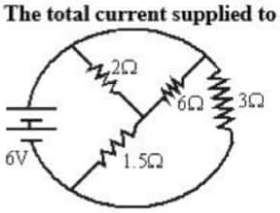
○ A ○ B ○ C ○ D

111) **Of the two bulbs in a house, one glows brighter than the other. Which of the two has larger resistance?**

A) Bright bulb
B) Dim bulb
C) Both have same resistance
D) Brightness does not depend on resistance

○ A ○ B ○ C ○ D

112) **The total current supplied to the circuit by the battery is:**



A) 1 A
B) 2 A
C) 4 A
D) 6 A

○ A ○ B ○ C ○ D

113) **A cell of internal resistance 2 Ω and emf 10 V is connected to a uniform wire of length 500 cm and resistance 3 Ω. The potential gradient in wire is:**

A) 24 mV/cm
B) 30 mV/cm
C) 12 mV/cm
D) 4 mV/cm

○ A ○ B ○ C ○ D

114) **A certain wire has a resistance R, the resistance of an other wire of an identical material with the first, except for twice its diameter is:**

A) $\frac{1}{4}R$
B) 2 R
C) 4 R
D) Same as R

○ A ○ B ○ C ○ D

115) **If the temperature of a conductor is increased, the product of resistivity and conductivity:**

A) Increases
B) Remains constant
C) Decreases
D) May increase or decrease

○ A ○ B ○ C ○ D

PREVIOUS FINISH TEST NEXT

116) **Directions: Each sentence below has a blank indicating that something has been omitted. Choose the word that best fits in with the meaning of the sentence as a whole.**

Since Jamshaid could not find a map of the gigantic mall, he felt as though she was in a never- ending _____.

A) Palpitation
B) Labyrinth
C) Reflex
D) Variations

○ A ○ B ○ C ○ D

117) **The boy was absolutely cured, and two months later a shepherd, who had been bitten by a mad dog, was similarly_____.**

A) Exacerbated
B) Marred
C) Debilitated
D) Cured

○ A ○ B ○ C ○ D

118) **The culpable child _____ some words to her mother for pardoning his delinquency.**

A) Mumbled
B) Reserved
C) Preserved
D) Exaggerated

○ A ○ B ○ C ○ D

119) **There was no use of Mr. Hubert's protesting, for nobody _____him.**

A) Suspected
B) Inquired
C) Believed
D) Entailed

○ A ○ B ○ C ○ D

120) **She was feeling _____ after five hours of surgery.**

A) Groggy
B) Haggard
C) Pally
D) Grope

○ A ○ B ○ C ○ D

121) **That is just an example of what I complain _____.**

A) With
B) To
C) Off
D) Of

○ A ○ B ○ C ○ D

122) **The parents were stunned when they saw that children had created____ in the bedroom.**

A) Knack
B) Groggy
C) Dank
D) Mayhem

○ A ○ B ○ C ○ D

123) **Chips found himself the _____instead of the rescuer.**

A) Resuscitated
B) Orientated
C) Rescued
D) Hailed

○ A ○ B ○ C ○ D

124) **They sometimes feel a _____ for the mountains and the sea.**

A) Yearning
B) Yapping
C) Yelling
D) Yielding

○ A ○ B ○ C ○ D

125) **Wetherby himself was very fatherly and courteous; he must have been ____then, poor chap, for he died during the summer vacation.**

A) Efficient
B) Intensify
C) Ill
D) Genial

○ A ○ B ○ C ○ D

126) **The new teacher showed no _____ about hitting the students.**

A) Quakes
B) Qualms
C) Quarrel
D) Quotation

○ A ○ B ○ C ○ D

127) **After Kashif failed the class, it was obvious his long hours of studying were in_____.**

A) Vein
B) Vain
C) Wan
D) Wane

○ A ○ B ○ C ○ D

128) **The accident happened due to the driver's _____.**

A) Negligence
B) Reluctance
C) Regret
D) Nuisance

○ A ○ B ○ C ○ D

129) **He was a good athlete when he came by his wild idea _____about the age of sixteen.**

A) In
B) On
C) At
D) For

○ A ○ B ○ C ○ D

130) **I _____ caution in interpreting these results.**

A) Urge
B) Usher
C) Usurp
D) Uproot

○ A ○ B ○ C ○ D

131) **One evening, as the sun was setting, some travelers _____to rest under a clump of trees**

A) Stayed
B) Wheedled
C) Queued
D) Stipulated

○ A ○ B ○ C ○ D

132) **Maybe we can _____ the car damage by repainting the scratched area.**

A) Exaggerate
B) Disguise
C) Stipulate
D) Divulge

○ A ○ B ○ C ○ D

133) **Actually, too, his hair had been graying for years; yet now, for the first time, people seemed to _____it.**

A) Debilitate
B) Overlook
C) Notice
D) Snub

○ A ○ B ○ C ○ D

134) **The volcano inflicted _____upon the tiny village.**

A) Stoicism
B) Sagacity
C) Havoc
D) Vendetta

○ A ○ B ○ C ○ D

135) **Although Roger's lips moved, he couldn't even _____ "Thank you, ma'am," to Mrs. Luella Bates Washington Jones.**

A) Quieten
B) Particulate
C) Assuage
D) Articulate

○ A ○ B ○ C ○ D

PREVIOUS FINISH TEST

BIOLOGY

1	D	11	B	21	A	31	B
2	B	12	D	22	C	32	A
3	A	13	C	23	D	33	D
4	B	14	C	24	B	34	A
5	D	15	B	25	B	35	C
6	B	16	B	26	D	36	A
7	C	17	C	27	B	37	C
8	A	18	B	28	A	38	D
9	B	19	D	29	B	39	D
10	B	20	D	30	B	40	B

41	B						
42	D						
43	B						
44	A						
45	C						
46	B						
47	B						
48	B						
49	C						
50	A						

Chem

51	D	61	A	71	D	81	C
52	D	62	C	72	D	82	A
53	C	63	D	73	C	83	B
54	D	64	A	74	C	84	A
55	D	65	C	75	C	85	B
56	C	66	C	76	C		
57	D	67	B	77	D		
58	A	68	B	78	D		
59	D	69	B	79	B		
60	B	70	B	80	D		

86	B	96	C	106	B
87	D	97	C	107	A
88	C	98	A	108	A
89	A	99	A	109	A
90	B	100	A	110	A
91	B	101	C	111	B
92	A	102	B	112	C
93	A	103	C	113	C
94	D	104	D	114	A
95	D	105	C	115	B

Eng

116	B	121	D	126	B	131	A
117	D	122	D	127	B	132	B
118	A	123	C	128	A	133	C
119	C	124	A	129	C	134	C
120	A	125	C	130	A	135	D

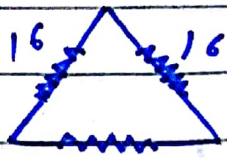
T-4

86- (B) $I = \frac{Q}{t} = \frac{ne}{t}$

$n = \frac{It}{e} = \frac{2 \times 1}{1.6 \times 10^{-19}} = 1.25 \times 10^{19}$

87. (D) $0.25A = 250 \times 10^{-3} A$

88- (C)



$R = \frac{n-1}{n} R$

$= \frac{3-1}{3} \times 16$

$= \frac{2}{3} \times 16$

$= 10.6\Omega$

89. (A) $\Delta V_1 : \Delta V_2 : \Delta V_3 = R_1 : R_2 : R_3$

$2.5 : 2.5 : 5 = R_1 : R_2 : R_3$

$1 : 1 : 2 = R_1 : R_2 : R_3$

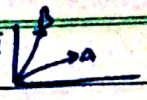
90- (B) $2R \rightarrow 10$ parts

Resistance of every Part $= \frac{2R}{10}$

In Two series $\rightarrow \frac{2R}{10} + \frac{2R}{10} \rightarrow \frac{2R}{5}$

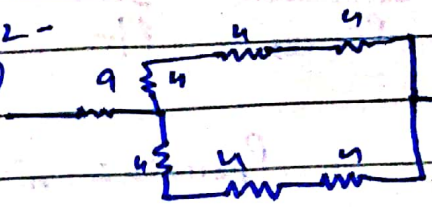
In Parallel $\rightarrow \frac{2R}{5/5} = \boxed{\frac{2R}{25}}$

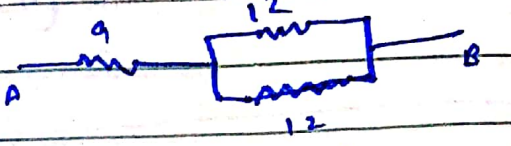
91- (B)

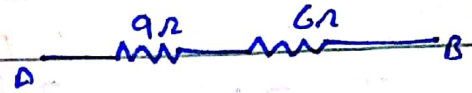


slop = conductance

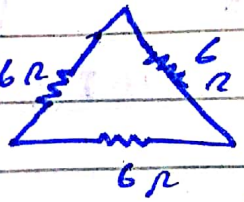
92- (A)







93- (A)



$\frac{n-1}{n} R = \frac{2}{3} 6^2 = 4\Omega$

94- (D) $L' = 2L$

$R' = n^2 R$

$R' = (2)^2 R$

$= 4 \times 4 = 16\Omega$

95- (D) All of these

96- (C)

$\frac{R_1}{R_2} = \frac{\rho (10)}{\pi (1)^2} \times \frac{\pi (2)^2}{\rho \times L}$

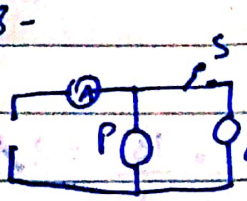
$\frac{3}{9} = \frac{4 \times 10}{L}$

$L = \frac{40 \times 9}{3}$

$L = 120 m$

97- (C) $\frac{V}{P} = \frac{P}{I}$ ($\because P = IV$)

98- (A)



Total resistance $= \frac{R}{2}$

Q → Disconnect

Now: Total resistance = R

R ↑ double I ↓ half

99- (A) $P = \frac{V^2}{R} \Rightarrow R_{35W} > R_{70W}$

$I = \frac{V}{R} \Rightarrow I_{70} > I_{35W}$

100- (A) $\because I = 0$

$E = V_t + Ir$

$\boxed{E = V_t}$

101- (C) $E = Ir$

$r = \frac{E}{I}$

$r = \frac{6}{3} = 2\Omega$

102 (B) $I = \frac{E}{R+r} = \frac{24}{5.5+2.5}$

$I = \frac{24}{8} = 3A$

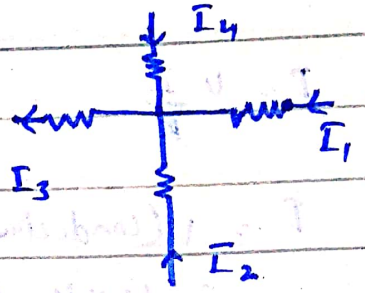
Now

$V = IR = 3(5.5) = 16.5V$

103- E = IR + Ir = constant

(C)

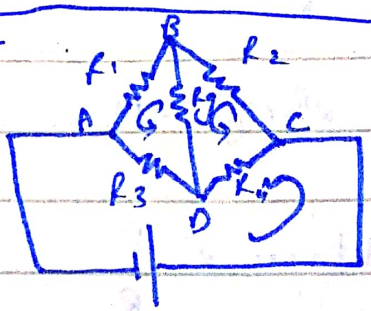
104- (D)



$I_1 + I_2 + I_4 = I_3$

$I_1 I_2 = I_3 - I_4$

105- (C)



$-I_1 R_1 - (I_1 + I_2) R_g - (I - I_3) R_3 =$

106 (B) Positive, negative

107. Statement of

(A) KCL

108 (A)

$P_a = \frac{V^2}{R} \Rightarrow R = \frac{V^2}{P}$

$R = \frac{200 \times 200}{100}$

$R = 400\Omega$

$R_{cold} = \frac{R_{hot}}{10} = \frac{400}{10} = 40\Omega$

Q109 $\Rightarrow$ constant

(A)

110

(A) $I = V\frac{I}{R}$

$I = V$(conductance)

$= 10 \times 4 = 40A$

111)

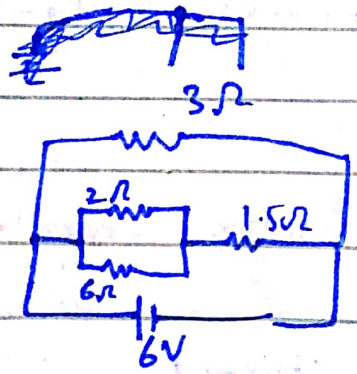
(B) $P_{Dissi} = \frac{V^2}{R}$

$P_{dissi} \propto$ Brightness

$\therefore$ Brightness $\propto \frac{1}{R}$

112

(C)



$R_{eq} = 1.5\Omega$

$I = \frac{V}{R_{eq}} = \frac{6}{1.5} = 4A$

113

(C)

$I = \frac{E}{R+r}$ ...

$I = \frac{10}{2+3} = \frac{10}{5} = 2A$

$V = E - Ir$

$= 10 - 2 \times 2 = 6V$

Potential gradient $= \frac{6}{500cm}$

$= \frac{6000}{500} \frac{mV}{cm}$

$= 12\frac{mV}{cm}$

114

(A) $R' = \frac{\rho L}{\frac{A}{4}(2d)^2}$

$R = \frac{\rho L}{\pi d^2}$

$R \propto \frac{1}{d^2}$

$\frac{R_2}{R_1} = \frac{d_1^2}{d_2^2}$

$= \frac{d^2}{(2d)^2} \times R_1$

$R_2 = \frac{R_1}{4}$

15

B

$$\rho \propto \frac{1}{\sigma}$$

$$\rho \sigma = 1 = \text{constant}$$