

NEW STANDARD ACADEMY

Date : 04-08-2026

CLASS : 11TH NEET

Marks:720

Time: 3 hours

PHYSICS

1. Essential characteristic of equilibrium is :-

- (1) Momentum equals zero
- (2) Acceleration equals zero
- (3) K.E. equals zero
- (4) Velocity equals zero

2. A 5 kg mass is accelerated from rest to 60 m/s in 4. 1 s. What force acts on it: -

- (1) $5 \times 60\text{N}$
- (2) $(5/60) \times 981\text{N}$
- (3) $60^2 \times 52\text{N}$
- (4) $(5/2) \times 60^2 \times 981\text{N}$

3. A material body A of mass m_1 exerts a force on another material body B of mass m_2 . If the acceleration of B be a_2 the magnitude of the acceleration of A is :-

- (1) Zero
- (2) $m_2 a_2 / m_1$
- (3) $m_1 a_2 / m_2$
- (4) a_2

4. The velocity acquired by a mass m in travelling a certain distance d starting from rest under the action of a constant force is directly proportional to :-

- (1) $\sqrt{m}$
- (2) m°
- (3) $1/\sqrt{m}$
- (4) m

5. Gravel is dropped onto a conveyer belt at a rate of 0.5 kg/s. The extra force required in newton to keep the belt moving at 2 m/s is :-

- (1) 1 N
- (2) 2 N
- (3) 4 N
- (4) 0.5 N

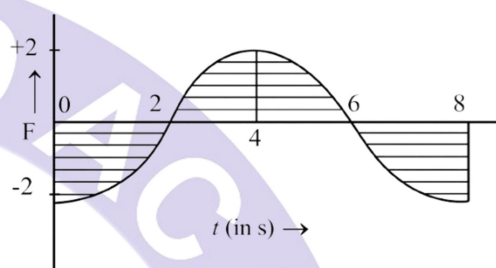
6. A ball weighing 10 g hits a hard surface vertically with a speed of 5 m/s and rebounds with the same speed. The ball remains in contact with the surface for (0.01) s. The average force exerted by the surface on the ball is :-

- (1) 100 N
- (2) 10 N

(3) 1 N

(4) 0.1 N

7. Force-time graph for the motion of a body is shown in fig. Change in linear momentum between 0 to 8 s is:-



- (1) Zero
- (2) 4 N-s
- (3) 8 N-s
- (4) None

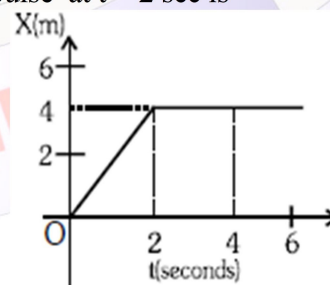
8. Newton's II law of motion connects:

- (1) Momentum and acceleration
- (2) Change of momentum and velocity
- (3) Rate of change of momentum and external force
- (4) Rate of change of force and momentum

9. n bullet strike per second elastically on a wall and rebound. What will be the force exerted on the wall by bullets if mass of each bullet is m :-

- (1) mnv
- (2) $4mnv$
- (3) $2mnv$
- (4) $\frac{mnv}{2}$

10. In the figure given below, the position-time graph of a particle of mass 0.1 kg is shown. The impulse at $t = 2$ sec is



- (1) $0.2\text{kg} \cdot \text{m} / \text{s}$
- (2) $-0.2\text{kg} \cdot \text{m} / \text{s}$
- (3) $0.1\text{kg} \cdot \text{m} / \text{s}$
- (4) $-0.4\text{kg} \cdot \text{m} / \text{s}$

11. A force of 10 N acts on a body of mass 20 kg for 10 seconds. The change in its momentum is

- (1) 50 kg-m/s (2) 100 kg-m/s
(3) 300 kg-m/s (4) 1000 kg-m/s

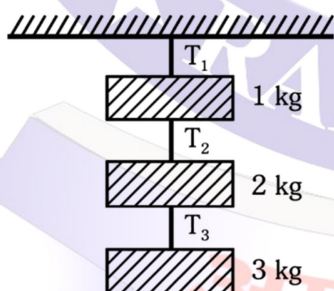
12. A 150 g tennis ball coming at a speed of 40 m/s is hit straight back by a bat to speed of 60 m/s. The magnitude of the average force F on the ball, when it is in contact for 5 ms with the bat is :-

- (1) 2500 N (2) 3000 N
(3) 3500 N (4) 4000 N

13. Ten one-rupee coins are put on top of each other on a table. Each coin has a mass m . Which of the following statements is not true? (counted from the bottom)

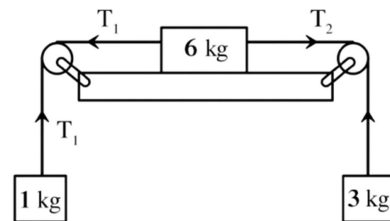
- (1) The force on the 6th coin due to all the its top is equal to $4mg$ (downwards). coins on
(2) The force on the 6th coin due to the 7th coin is $4mg$ (downwards)
(3) The reaction of the 6th coin on the 7th coin is $4mg$ (upwards).
(4) The total force on the 10th coin is $9mg$ (downwards)

14. Find the tension T_2 dagger the system shown in fig.



- (1) 1g N (2) 2g N
(3) 5g N (4) 6g N

15. Three masses of 1 kg, 6 kg and 3 kg are connected to each other with threads and are placed on a table as shown in figure. What is the acceleration with which the system is moving?(Take $g = 10 \text{ m/s}^2$)



- (1) Zero (3) $4\text{m} / \text{s}^2$
(2) $2\text{m} / \text{s}^2$ (4) $3\text{m} / \text{s}^2$

16. A block of mass m is placed on a smooth wedge of inclination θ . The whole system is accelerated horizontally so that the block does not slip on the wedge. The force exerted by the wedge on the block (g is acceleration due to gravity) will be :-

- (1) $mg \sin \theta$ (2) mg
(3) $mg/\cos \theta$ (4) $mg \cos \theta$

17. A small sphere is suspended by a string from the ceiling of a car. If the car begins to move with a constant acceleration $(g)/2$ the inclination of the string with the vertical is

- (1) $\tan^{-1}(1/2)$ in the direction of motion
(2) $\tan^{-1}(1/2)$ opposite to the direction of motion
(3) $\tan^{-1}(2)$ in the direction of motion
(4) $\tan^{-1}(2)$ opposite to the direction of motion

18. A boy sitting on the upper berth in the compartment of a train, which is about to stop at a railway station, drops an apple aiming at the open hand of his brother vertically below his hands at a distance of about 2 m. The apple will fall :-

- (1) In the hand of his brother
(2) Slightly away from the hands of his brother in the direction of motion of the train
(3) Slightly away from the hands of his brother in the direction opposite to the direction of motion of the train
(4) None of the above

19. The ratio of weights of a man in a stationary lift and in a lift accelerating downwards with

a uniform acceleration is 3: 2. The acceleration of the lift is:-

- (1) $g/3$ (2) $g/2$
(3) g (4) $4/3 g$

20. Two particles of masses m and M ($M > m$) are connected by a cord that passes over a massless and frictionless pulley. The tension T in the string and the acceleration a of the particles is :-

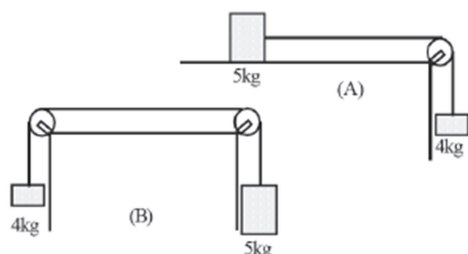
- (1) $T = \frac{2mM}{(M-m)} g; a = \left(\frac{mM}{m+M}\right) g$
(2) $T = \frac{2mM}{(M+m)} g; a = \left(\frac{m-M}{m+M}\right) g$
(3) $T = \frac{M-m}{(M+m)} g; a = \left(\frac{2mM}{m+M}\right) g$
(4) $T = \frac{mM}{(M+m)} g; a = \left(\frac{2mM}{m+M}\right) g$

21. In the fig. given below masses m and m' are tied with a thread passing over a pulley, m is on a frictionless horizontal surface. If acceleration due to gravity is g , the acceleration of m' in this arrangement will be :-



- (1) g (2) $m'g/(m + m')$
(3) mg/m' (4) $mg / (m - m')$

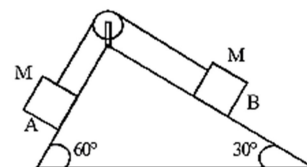
22. Two bodies of masses 5 kg and 4 kg are arranged in two different ways as shown in fig. (A) and (B). If the pulleys and the table are perfectly smooth, the acceleration of the 5 kg body in case (A) and (B) are respectively :-



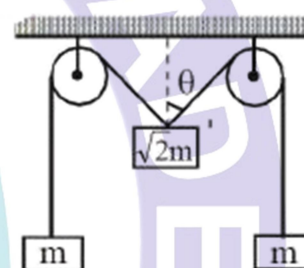
- (1) g and $(5/9) g$ (2) $(4/9)g$ and $(1/9)g$
(3) $g/5$ and $g/5$ (4) $(5/9)g$ and $(1/9)g$

23. Two blocks each of mass M are resting on a frictionless inclined planes as shown in fig.

then

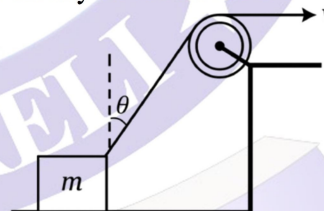


- (1) The block A moves down the plane
(2) The block B moves down the plane
(3) Both the blocks remain at rest
(4) Both the blocks move down the plane.
24. The pulleys and strings shown in the fig. are smooth and are of negligible mass. For the system to remain in equilibrium, the angle θ should be



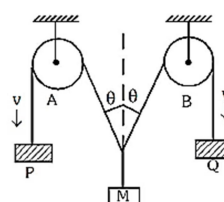
- (1) 0° (2) 30°
(3) 45° (4) 60°

25. A block is dragged on a smooth plane with the help of a rope which moves with a velocity v as shown in figure. The horizontal velocity of the block is :



- (1) v (2) $V/\sin \theta$
(3) $v \sin \theta$ (4) $V/\cos \theta$

26. In the fig., the ends P and Q of an unstretchable string move downward with uniform speed v . Mass M moves upwards with speed.



- (1) $v \cos \theta$ (2) $2v \cos \theta$
 (3) $v/\cos \theta$ (4) $2/v \cos \theta$

27. The coefficient of static friction between two surfaces depend on

- (1) the nature of surface
 (2) the shape of the surface in contact
 (3) the area of contact
 (4) all of the above

28. A block of mass 2 kg is placed on the floor. The coefficient of static friction is 0.4. Force of 2.8 N is applied on the block. The force of friction between the block and the floor is

- (1) 2.8 N (2) 8.0 N
 (3) 2.0 N (4) Zero

29. A car is moving along a straight horizontal road with a speed v_0 . If the coefficient of friction between tyres and the road is μ . The shortest distance in which the car can be stopped is:

- (1) $\frac{v_0^2}{2\mu g}$ (2) $\frac{v_0^2}{\mu g}$
 (3) $\left(\frac{v_0}{\mu g}\right)^2$ (4) $\frac{2v_0^2}{2\mu g}$

30. A block slides with constant velocity on a plane inclined at an angle θ . The same block is pushed up the plane with an initial velocity v_0 . The distance covered by the block before coming to rest is :-

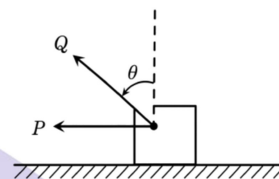
- (1) $\frac{v_0^2}{2g \sin \theta}$ (2) $\frac{v_0^2}{4g \sin \theta}$
 (3) $\frac{v_0^2 \sin^2 \theta}{2g}$ (4) $\frac{v_0^2 \sin^2 \theta}{4g}$

31. A block of mass m is lying on an inclined plane. The coefficient of friction between the plane and the block is μ . The force (F_1) required to move the block up the inclined plane will be:-

- (1) $mg \sin \theta + \mu mg \cos \theta$
 (2) $mg \cos \theta - \mu mg \sin \theta$
 (3) $mg \sin \theta - \mu mg \cos \theta$
 (4) $mg \cos \theta + \mu mg \sin \theta$

32. A block of mass m lying on a rough horizontal plane is acted upon by a horizontal force P and another force Q

inclined at an angle θ to the vertical. The block will remain in equilibrium if the coefficient of friction between it and the surface is :-

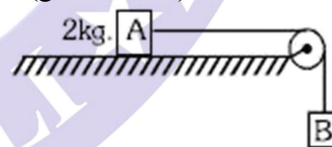


- (1) $\frac{P+Q \sin \theta}{mg+Q \cos \theta}$ (2) $\frac{P \cos \theta + Q}{mg - Q \sin \theta}$
 (3) $\frac{P+Q \cos \theta}{mg+Q \sin \theta}$ (4) $\frac{P \sin \theta + Q}{mg+Q \cos \theta}$

33. A block has been placed on an inclined plane with the slope angle θ , the block slides down the plane at constant speed. The coefficient of kinetic friction is equal to :-

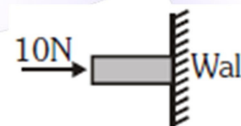
- (1) $\sin \theta$ (2) $\cos \theta$
 (3) g (4) $\tan \theta$

34. The coefficient of static friction, μ_s , between block A of mass 2 kg and the table as shown in the figure is 0.2. What would be the maximum mass value of block B so that the two blocks do not move? The string and the pulley are assumed to be smooth and massless. ($g = 10 \text{ m/s}^2$)



- (1) 4.0 kg (2) 0.2 kg
 (3) 0.4 kg (4) 2.0 kg

35. A horizontal force of 10 N is necessary to just hold a block stationary against a wall. The coefficient of friction between the block and wall is 0.2. The weight of the block is :-



- (1) 20 N (2) 50 N
 (3) 100 N (4) 2 N

36. A given object takes n times as much time to slide down a 45° rough incline as it takes to

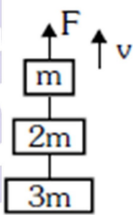
slide down a perfectly smooth 45° incline. The coefficient of kinetic friction between the object and the incline is given by: by

- (1) $\left(1 - \frac{1}{n^2}\right)$ (2) $\left(\frac{1}{1-n^2}\right)$
 (3) $\sqrt{\left(1 - \frac{1}{n^2}\right)}$ (4) $\sqrt{\left(\frac{1}{1-n^2}\right)}$

37. A body of mass M hits normally a rigid wall with velocity V and bounces back with the same speed. The impulse experienced by the body is:

- (1) MV (2) $1.5 MV$
 (3) $2 MV$ (4) Zero

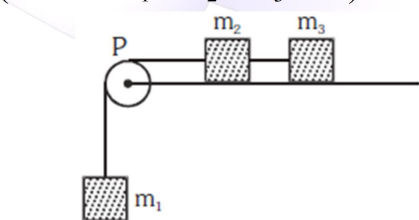
38. Three blocks with masses m , $2m$ and $3m$ are connected by strings, as shown in the figure. After an upward force F is applied on block m , the masses move upward at constant speed v . What is the net force on the block of mass $2m$? (g is the acceleration due to gravity)



- (1) $6 mg$ (3) $2 mg$
 (2) zero (4) $3 mg$

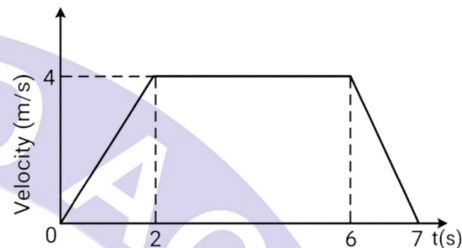
39. A system consists of three masses m_1 , m_2 and m_3 connected by a string passing over a pulley P . The mass m_1 hangs freely, m_2 and m_3 are on a rough horizontal table (the coefficient of friction $= \mu$). The pulley is frictionless and is of negligible mass. The downward acceleration of mass m_1 is:

40. (Assume $m_1 = m_2 = m_3 = m$)



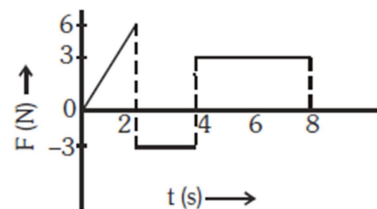
- (1) $\frac{g(1-2\mu)}{9}$ (2) $\frac{2g\mu}{3}$
 (3) $\frac{g(1-2\mu)}{9}$ (4) $\frac{g(1-2\mu)}{2}$

41. A lift of mass 100 kg starts moving from rests in the upward direction. Fig shows the variation of speed of the lift, T_1 , T_2 , and T_3 stand for tension in the rope from zero to two seconds, two to six seconds, six to seven seconds respectively then :-



- (1) $T_1: T_2: T_3 :: 1:1:1$
 (2) $T_1: T_2: T_3 :: 6:5:3$
 (3) $T_1: T_2: T_3 :: 3:5:6$
 (4) $T_1: T_2: T_3 :: 6:5:6$

42. The force ' F ' acting on a particle of mass ' m ' is indicated by the force-time graph shown below. The change in momentum of the particle over the time interval from zero to 8 s is :-



- (1) 24 Ns (2) 20 Ns
 (3) 12 Ns (4) 6 Ns

43. A block A of mass m_1 rests on a horizontal table. A light string connected to it passes over a frictionless pulley at the edge of table and from its other end another block B of mass m_2 is suspended. The coefficient of kinetic friction between the block and the table is μ_k . When the block A is sliding on the table, the tension in the string is :-

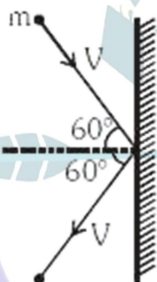
- (1) $\frac{(m_2 - \mu_k m_1)g}{(m_1 + m_2)}$
 (2) $\frac{m_1 m_2 (1 + \mu_k)g}{(m_1 + m_2)}$
 (3) $\frac{m_1 m_2 (1 - \mu_k)g}{(m_1 + m_2)}$

$$(4) \frac{(m_2 + \mu_K m_1)g}{(m_1 + m_2)}$$

44. 11. Three blocks A, B and C of masses 4 kg, 2 kg and 1 kg respectively, are in contact on a frictionless surface, as shown. If a force of 14 N is applied on the 4 kg block, then the contact force between A and B is:



- (1) 6 N (2) 8 N
(3) 18 N (4) 2 N
45. 13. A rigid ball of mass m strikes a rigid wall at 60° and gets reflected without loss of speed as shown in the figure below. The value of impulse imparted by the wall on the ball will be :-



- (1) mV (2) mV 3
(3) mV (4) $2mV$

CHEMISTRY

46. Match List I and List II and pick out correct matching codes from the given choices.

List I

- (A) ClF_3
(B) PCl_5
(C) IF_5

- (D) CCl_4
(E) XeF_4

List II

- (1) Square planar
(2) Tetrahedral
(3) Trigonal bipyramidal
(4) Square pyramidal
(5) T-shaped

- (1) A $\rightarrow$ 5 B $\rightarrow$ 4 C $\rightarrow$ 3 ; D $\rightarrow$ 2 E $\rightarrow$ 1
(2) A $\rightarrow$ 5 B $\rightarrow$ 3 ; C $\rightarrow$ 4 ; D $\rightarrow$ 2 ; E $\rightarrow$ 1
(3) A $\rightarrow$ 5 B $\rightarrow$ 3 ; C $\rightarrow$ 4 D $\rightarrow$ 1 ; E $\rightarrow$ 2
(4) A $\rightarrow$ 4 B $\rightarrow$ 3 ; C $\rightarrow$ 5 ; D $\rightarrow$ 2 E $\rightarrow$ 1
(5) A $\rightarrow$ 5 B $\rightarrow$ 4 C $\rightarrow$ 1 ; D $\rightarrow$ 5 E $\rightarrow$ 2

47. Match List I with List II. Select the correct answer using the codes given below the list.

List I	List II
(A) NH_3	(p) $sp^3 d^3$
(B) PCl_3	(q) $sp^3 d$
(C) SF_4	(r) sp^3
(D) IF_7	(s) $sp^3 d^2$

- (1) A $\rightarrow$ r B $\rightarrow$ q C $\rightarrow$ s D $\rightarrow$ p
(2) A $\rightarrow$ p B $\rightarrow$ q C $\rightarrow$ r D $\rightarrow$ s
(3) A $\rightarrow$ q B $\rightarrow$ r ; C $\rightarrow$ p D $\rightarrow$ s
(4) A $\rightarrow$ s B $\rightarrow$ p ; C $\rightarrow$ q D $\rightarrow$ r

48. Match column I with column II, and choose the correct combination from the options given below.

Column I (Molecule)	Column II (Bond angle)
a. BCl_3	i. 107°
b. NH_3	ii. 109.5°
c. H_2O	iii. 104.5°
d. CH_4	iv. 120°

- (1) a $\rightarrow$ ii b $\rightarrow$ iii c $\rightarrow$ i d $\rightarrow$ iv
(2) a $\rightarrow$ iv b $\rightarrow$ i c $\rightarrow$ iii d $\rightarrow$ ii
(3) a $\rightarrow$ iii b $\rightarrow$ ii c $\rightarrow$ vi ; d $\rightarrow$ i
(4) a $\rightarrow$ i b $\rightarrow$ iv c $\rightarrow$ ii d $\rightarrow$ iii

49. Which of the following statement is true?

- (1) Silicon exhibits maximum 4 coordination number in its compound.
(2) Bond energy of F_2 is less than Cl_2 .
(3) Mn (III) oxidation state is more stable than Mn (II) in aqueous state.
(4) Elements of 15th group show only +3 and +5 oxidation states.

50. H_2O is dipolar, whereas BeF_2 is not because

- (1) H_2O is angular and BeF_2 is linear.
(2) The electronegativity of F is greater than that of O.
(3) H_2O involves hydrogen bonding whereas BeF_2 is a discrete molecule.
(4) H_2O is linear and BeF_2 is angular.

51. Among the following pairs in which of the two species are not isostructural?

- (1) PF_6^- and SF_6 (2) SiF_4 and SF_4
(3) IO_3^- and XeO_3 (4) BH_4^- and NH_4^+

52. The shape of O_2F_2 is similar to that of
 (1) C_2F_2 (2) H_2O_2
 (3) H_2F_2 (4) C_2H_2
53. Which of the following molecules has trigonal planar geometry?
 (1) NH_3 (2) BF_3
 (3) PCl_3 (4) IF_3
54. The isoelectronic pair is
 (1) Cl_2O , ICl_2^- (2) ICl_2^- , ClO_2
 (3) IF_2^+ , I_3^+ (4) ClO_2 , ClF_2^+
55. The correct order of C-O bond length among CO , CO_3^{2-} , CO_2 is
 (1) $\text{CO} < \text{CO}_3^{2-} < \text{CO}_2$
 (2) $\text{CO}_3^{2-} < \text{CO}_2 < \text{CO}$
 (3) $\text{CO} < \text{CO}_2 < \text{CO}_3^{2-}$
 (4) $\text{CO}_2 < \text{CO} < \text{CO}_3^{2-}$
56. The correct order of increasing bond angles in the following triatomic species is
 (1) $\text{NO}_2^+ < \text{NO}_2 < \text{NO}_2^-$
 (2) $\text{NO}_2^+ < \text{NO}_2^- < \text{NO}_2$
 (3) $\text{NO}_2^- < \text{NO}_2^+ < \text{NO}_2$
 (4) $\text{NO}_2^- < \text{NO}_2 < \text{NO}_2^+$
57. According to MO theory which of the following lists ranks the nitrogen species in terms of increasing bond order?
 (1) $\text{N}_2^- < \text{N}_2^{2-} < \text{N}_2$ (2) $\text{N}_2^- < \text{N}_2 < \text{N}_2^{2-}$
 (3) $\text{N}_2^{2-} < \text{N}_2^- < \text{N}_2$ (4) $\text{N}_2 < \text{N}_2^{2-} < \text{N}_2^-$
58. The correct order of increasing bond angle in the following species is
 (1) $\text{ClO}_2^- < \text{Cl}_2\text{O} < \text{ClO}_2$
 (2) $\text{Cl}_2\text{O} < \text{ClO}_2 < \text{ClO}_2^-$
 (3) $\text{ClO}_2 < \text{Cl}_2\text{O} < \text{ClO}_2^-$
 (4) $\text{Cl}_2\text{O} < \text{ClO}_2^- < \text{ClO}_2$
59. In which of the following pairs of molecules/ions, the central atoms have sp^2 hybridisation?
 (1) BF_3 and NH_2^- (2) NO_2^- and NH_3
 (3) BF_3 and NO_2^- (4) NH_2^- and H_2O
60. Which of the following has the minimum bond length
 (1) O_2^+ (2) O_2^-
 (3) O_2^{2-} (4) O_2
61. The correct order of increasing bond length of C-H, C-O, C-C and C=C is
 (1) $\text{C} - \text{H} < \text{C} = \text{C} < \text{C} - \text{O} < \text{C} - \text{C}$
 (2) $\text{C} - \text{C} < \text{C} = \text{C} < \text{C} - \text{O} < \text{C} - \text{H}$
 (3) $\text{C} - \text{O} < \text{C} - \text{H} < \text{C} - \text{C} < \text{C} = \text{C}$
 (4) $\text{C} - \text{H} < \text{C} - \text{O} < \text{C} - \text{C} < \text{C} = \text{C}$
62. In solid ice, oxygen atom is surrounded
 (1) tetrahedrally by 4 hydrogen atoms
 (2) octahedrally by 2 oxygen and 4 hydrogens atoms
 (3) tetrahedrally 2 hydrogen and 2 oxygens atoms
 (4) octahedrally by 6 hydrogens atoms
63. Decreasing order of bond angle is
 (1) $\text{BeCl}_2 > \text{NO}_2 > \text{SO}_2$
 (2) $\text{BeCl}_2 > \text{SO}_2 > \text{NO}_2$
 (3) $\text{SO}_2 > \text{BeCl}_2 > \text{NO}_2$
 (4) $\text{SO}_2 > \text{NO}_2 > \text{BeCl}_2$
64. Four diatomic species are listed below. Identify the correct order in which the bond order is increasing in them
 (1) $\text{C}_2^{2-} < \text{He}_2^+ < \text{O}_2^- < \text{NO}$
 (2) $\text{He}_2^+ < \text{O}_2^- < \text{NO} < \text{C}_2^{2-}$
 (3) $\text{NO} < \text{O}_2^- < \text{C}_2^{2-} < \text{He}_2^+$
 (4) $\text{O}_2^- < \text{NO} < \text{C}_2^{2-} < \text{He}_2^+$
65. XeF_2 is isostructural with
 (1) ICl_2^- (2) SbCl_3
 (3) BaCl_2 (4) TeF_2
66. In which of the following pairs, both the species are not isostructural?
 (1) NH_3 , PH_3 (2) XeF_4 , XeO_4
 (3) SiCl_4 , PCl_4 (4) Diamond, silicon carbide
67. Which of the following species contains equal number of σ -bonds and π -bonds?
 (1) $(\text{CN})_2$ (2) $\text{CH}_2(\text{CN})_2$
 (3) HCO_3^- (4) XeO_4
68. The correct bond order in the following species is
 (1) $\text{O}_2^{2+} < \text{O}_2^- < \text{O}_2^+$
 (2) $\text{O}_2^+ < \text{O}_2^- < \text{O}_2^{2+}$
 (3) $\text{O}_2^- < \text{O}_2^+ < \text{O}_2^{2+}$
 (4) $\text{O}_2^{2+} < \text{O}_2^+ < \text{O}_2^-$

69. Among the following, which one is a wrong statement?

- (1) I_3^+ has bent geometry
- (2) PH_5 and $BiCl_5$ do not exist
- (3) $p\pi - d\pi$ bonds are present in SO_2
- (4) SeF_4 and CH_4 have same shape

70. The correct geometry and hybridisation for XeF_4 , are

- (1) Square planar, $sp^3 d^2$
- (2) Octahedral, $sp^3 d^2$
- (3) Trigonal bipyramidal, $sp^3 d$
- (4) Planar triangle, $sp^3 d^3$

71. Match the compounds given in column I with the hybridisation and shape given in column II and mark the correct option.

Column I	Column II
(A) XeF_6	(i) distorted octahedral
(B) XeO_3	(ii) square planar
(C) $XeOF_4$	(iii) pyramidal
(D) XeF_4	(iv) square pyramidal

Code:

- | | A | B | C | D |
|-----|------|-------|------|-------|
| (1) | (iv) | (i) | (ii) | (iii) |
| (2) | (i) | (iii) | (iv) | (ii) |
| (3) | (i) | (ii) | (iv) | (iii) |
| (4) | (iv) | (iii) | (i) | (ii) |

72. Consider the molecules CH_4 , NH_3 and H_2O .

Which of the given statements is false?

- (1) The H-C-H bond angle in CH_4 is larger than the H-N-H bond angle in NH_3 .
- (2) The H-C-H bond angle in CH_4 the H-N-H bond angle in NH_3 and the H-O-H bond angle in H_2O are all greater than 90° .
- (3) The H-O-H bond angle in H_2O is larger than H-C-H bond angle in CH_4
- (4) The H-O-H bond angle in H_2O is smaller than the H-N-H bond angle in NH_3

73. Predicted the correct order among the following:

- (1) lone pair-bond pair > bond pair-bond

pair > lone pair-lone pair

(2) lone pair-lone pair > lone pair-bond pair > bond pair-bond pair

(3) lone pair-lone pair > bond pair-bond pair > lone pair-bond pair

(4) bond pair-bond pair > lone pair-bond pair > lone pair-lone pair

74. Magnesium reacts with an element (X) to form an ionic E compound. If the ground state electronic configuration of (X) is $1s^2 2s^2 2p^3$ the simplest formula for this compound is

- (1) Mg_2X_3
- (2) MgX_2
- (3) Mg_2X
- (4) Mg_3X_2

75. Identify the wrongly match pair.

Molecule	Shape or geometry of molecule
(1) NH_3	Trigonal pyramidal
(2) PCl_5	Trigonal planar
(3) SF_6	Octahedral
(4) $BeCl_2$	Linear

76. Match the compounds of Xe in column I with the molecular structure in column II.

Column I	Column II
(a) XeF_2	(i) Square planar
(b) XeF_4	(ii) Linear
(c) XeO_3	(iii) Square pyramidal
(d) $XeOF_4$	(iv) Pyramidal

(1) (a)-(ii) (b)-(i) (c)-(iv) (d)-(iii)

(2) (a)-(ii) (b)-(i) (c)-(iii) (d)-(iv)

(3) (a)-(ii) (b)-(iv) (c)-(iii) (d)-(1)

(4) (a)-(ii) (b)-(iii) (c)-(i) (d)-(iv)

77. Match List-I with List-II.

List-I	List-II
(a) PCl_5	(i) Square pyramidal
(b) SF_6	(ii) Trigonal planar
(c) BrF_5	(iii) Octahedral
(d) BF_3	(iv) Trigonal bipyramidal

Choose the correct answer from the options given.

- (1) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

- (2) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
 (3) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
 (4) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

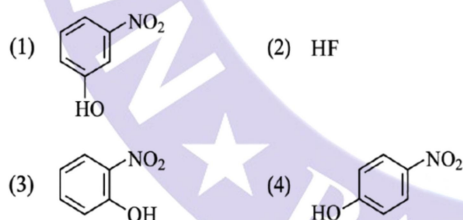
78. Which amongst the following is incorrect statement?

- (1) H_2^+ ion has one electron.
 (2) O_2^+ ion is diamagnetic.
 (3) The bond orders of O_2^+ , O_2 , H_2^- and O_2^{2-} are 2.5, 2, 1.5 and 1, respectively.
 (4) C_2 molecule has four electrons in its two degenerate π molecular orbitals

79. The correct order of energies of molecular orbitals of N_2 molecule is

- (1) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < (\pi 2p_x = \pi 2p_y) < \sigma^* 2p_z < (\pi^* 2p_x = \pi^* 2p_y) < \sigma^* 2p_z$
 (2) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < \sigma^* 2p_z < (\pi 2p_x = \pi 2p_y) < (\pi^* 2p_x = \pi^* 2p_y) < \sigma^* 2p_z$
 (3) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < \sigma 2p_z < \sigma^* 2p_z < (\pi^* 2p_x = \pi^* 2p_y) < (\pi^* 2p_x = \pi^* 2p_y)$
 (4) $\sigma 1s < \sigma^* 1s < \sigma 2s < \sigma^* 2s < (\pi 2p_x = \pi 2p_y) < (\pi^* 2p_x = \pi^* 2p_y) < \sigma^* 2p_z < \sigma^* 2p_z$

80. Intramolecular hydrogen bonding is present in



81. Match List I with List II.

List I (Compound)	List II (Shape/geometry)
A. NH_3	I. Trigonal Pyramidal
B. BrF_3	II. Square Planar
C. XeF_4	III. Octahedral
D. SF_6	IV. Square Pyramidal

Choose the correct answer from the options given below:

- (1) A-III, B-IV, C-I, D-II
 (2) A-II, B-III, C-IV, D-I
 (3) A-I, B-IV, C-II, D-III
 (4) A-II, B-IV, C-III, D-I

82. Identify the correct answer.

- (1) Dipole moment of NF_3 is greater than that of NH_3
 (2) Three canonical forms can be drawn for CO_3^{2-} ion.
 (3) Three resonance structures can be drawn for ozone.
 (4) BF_3 has non-zero dipole moment

83. In the case of alkali metals, the covalent character decreases in the order:

- (1) $\text{MI} > \text{MBr} > \text{MCl} > \text{MF}$
 (2) $\text{MCl} > \text{MI} > \text{MBr} > \text{MF}$
 (3) $\text{MF} > \text{MCl} > \text{MBr} > \text{MI}$
 (4) $\text{MF} > \text{MCl} > \text{MI} > \text{MBr}$

84. What is the dominant intermolecular force or bond that must be overcome in converting liquid CH_3OH to a gas?

- (1) London or dispersion force
 (2) Hydrogen bonding
 (3) Dipole-dipole interaction
 (4) Covalent bonds

85. Some of the properties of the two species, NO_3^- and H_3O^+ are described below. Which one of them is correct?

- (1) Isostructural with same hybridisation for the central atom.
 (2) Isostructural with different hybridisation for the central atom.
 (3) Similar in hybridisation for the central atom with different structures.
 (4) Dissimilar in hybridisation for the central atom with different structures.

86. Which of the following alkaline earth metal sulphates has hydration enthalpy higher than the lattice enthalpy?

- (1) SrSO_4 (2) CaSO_4
 (3) BeSO_4 (4) BaSO_4

87. In which one of the following species the central atom has the type of hybridisation which is not the same as that present in the other three?

- (1) PCl_5 (2) SF_4
 (3) I_3^- (4) SbCl_5^{2-}

88. Which one of the following molecular hydrides acts as a Lewis acid?
- (1) CH_4 (2) NH_3
(3) H_2O (4) B_2H_6
89. Which of the following is electron deficient?
- (1) $(\text{SiH}_3)_2$ (2) $(\text{BH}_3)_2$
(3) PH_3 (4) $(\text{CH}_3)_2$
90. Which one of the following molecules contains no π bond?
- (1) H_2O (2) SO_2
(3) NO_2 (4) CO_2

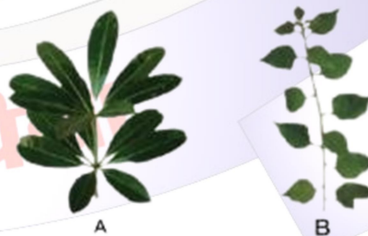
BIOLOGY

91. Given below are two statements one is labelled as Assertion (A) and the other is labelled as Reason (R)
- Assertion (A):**
In cassia and gulmohur, the aestivation is called Imbricate
- Reason (R):**
In Imbricate aestivation, margins of sepals or petals overlap one another in particular direction
- In the light of the above statements, choose the correct answer from the options given below:**
- (1) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
(2) (A) is correct but (R) is not correct
(3) (A) is not correct but (R) is correct
(4) Both (A) and (R) are correct and (R) is the correct explanation of (A)

92. Given below are two statements one is labelled as Assertion (A) and the other is labelled as Reason (R)
- Assertion (A):**
In mustard, chinrose and brinjal superior ovary present
- Reason (R):**
In Epigynous flower gynoecium occupies the lowest position while other part of flower arises above the ovary

In the light of the above statements, choose the correct answer from the options given below:

- (1) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
(2) (A) is correct but (R) is not correct
(3) (A) is not correct but (R) is correct
(4) Both (A) and (R) are correct and (R) is the correct explanation of (A)
93. Given below are two statements:
- Statement I:**
Belladonna, ashwagandha and Muliathi are medicinal plant and they belong to family fabaceae.
- Statement II:**
Petunia is the ornamental plant and belong to family solanaceae
- In the light of the above statements, choose the correct answer from the options given below**
- (1) Both Statement I and Statement II are incorrect
(2) Statement I is correct but Statement II is incorrect
(3) Statement I is incorrect but Statement II is correct
(4) Both Statement I and Statement II are correct.
94. Identify the diagram A and B and select correct option for A and B :



- (1) A-whorl- Alstonia, B-Alternate - Mustard
(2) A-whorl-Alstonia, B- Opposite - China rose
(3) A-Alternate-Sunflower, B-Opposite-Calotropis
(4) A-Opposite- Chinrose, B-Alternate- Mustard
95. When flower can be divided into two similar halves only in one particular vertical plane is

found in:

- | | |
|------------|------------------|
| (1) Cassia | (2) Gulmohur |
| (3) Bean | (4) All of these |

96. Match the following column I and column II:

- | Column-I | Column-II |
|--------------|----------------|
| a. Valvate | i. Pea |
| b. Twisted | ii. Cotton |
| c. Imbricate | iii. Gulmohar |
| d. Vaxillary | iv. Calotropis |

- (1) a-iv, b-ii, c-iii, d-i
(2) a-iv, b-iii, c-ii, d-i
(3) a-i, b-ii, c-iv, d-iii
(4) a-ii b-iv c-iii d-i

97. Match the following column I and column II :

- | column-I | column-II |
|-----------------|---------------|
| a. Marginal | i. Lemon |
| b. Axil | ii. Pea |
| c. Parietal | iii. Primrose |
| d. Free central | iv. Argemone |
| e. Basal | v. Marigold |

- (1) a-i, b-ii, c-iii, d-iv, e-v
(2) a-v, b-iv, c-iii, d-ii, e-i
(3) a-ii, b-i, c-iv, d-iii, e-v
(4) a-ii, b-i, c-v, d-iii, e-iv

98. Stem modified into flattened and fleshy structures are known as:

- | | |
|--------------|------------------|
| (1) Phyllode | (2) Phylloclade |
| (3) Tuber | (4) All of these |

99. In which of the following lateral branches originate from the basal and underground portion of the main stem, grow horizontally beneath the soil and then come out obliquely upward giving rise to leafy shoots:

- | | |
|-------------------|---------------|
| (1) Pistia | (2) Eichornia |
| (3) Chrysanthemum | |
| (4) All of these | |

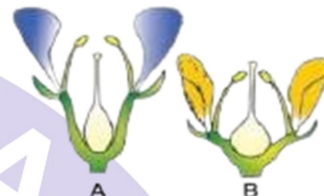
100. Match the following columns

- | Column-I | Column-II |
|----------------------|-------------|
| a. Tap root | i. Monstera |
| b. Fibrous root | ii. Guava |
| c. Adventitious root | iii. Banyan |

d. Prop root iv. Wheat

- (1) a-ii, b-iv, c-i, d-iii
(2) a-i, b-ii, cili, d-iv
(3) a-ii, b-iii, c-i, d-iv
(4) a-iii, b-i, c-ii, d-iv

101. In given diagram A and B represent:



- (1) A-Epigynous, B-Perigynous
(2) A-Perigynous, B-Perigynous
(3) A-Epigynous, B - Hypogynous
(4) A-Hypogynous, B-Epigynous

102. In the given following statements, select the correct statements

- (a) A number of leaflets are present on a common axis, the rachis, which represent the midrib of the leaf in pinnately compound leaf
(b) The leaf base may become swollen is pulvinus in some leguminous plants
(c) Supporting roots coming out of the lower nodes of the stem called stilt roots in Banyan and Rhizophora
(d) Axillary buds of stems may also get modified into woody, straight pointed thorns as in Citrus and Bougainvillea
(1) a, b, c, d are correct
(2) a, b, d are correct
(3) b, c, d are correct
(4) a, c, d are correct

103. Prop roots are:

- | | |
|---------------------|------------------------|
| (1) Tap roots | (2) Adventitious roots |
| (3) Secondary roots | (4) All of these |

104. Match the following column I & column II

- | Column -I | Column - II |
|---------------------|-------------------|
| a. Stem tendrils | i. Maize |
| b. Thorns | ii. Bougainvillea |
| c. Underground stem | iii. Watermelon |
| d. Stilt root | iv. Colocasia |

- (1) a-iii, b-ii, c-iv, d-i
 (2) a-iv, b-ii, c-i, d-iii
 (3) a-i, b-ii, c-iii, d-iv
 (4) a-iii, b-ii, c-i, d-iv

105. Select the correct match:

Family	Fruit
(i) Solanaceae	Berry or capsule
(ii) Fabaceae	Legume
(iii) Liliaceae	Rarely Berry
(1) (i) and (ii) only	(2) (ii) and (iii) only
(3) (i) only	(4) All are correct

106. Which of these belong to the family

Liliaceae

- (i) Gloriosa (ii) Aloe
 (iii) Petunia (iv) Colchicum autumnale
 (v) Asparagus (vi) Chilli
 (1) (i), (ii), (iii), (iv)
 (2) (i), (ii), (iv), (v)
 (3) (i), (ii), (v), (vi)
 (4) (ii), (iv), (v), (vi)

107. How many plants among these are

Medicinal- Lupin, Aloe, Muliathi, Belladonna, Gloriosa

- (1) 3 (2) 2
 (3) 5 (4) 1

108. The technical term used for the androecium in a flower of China rose is:

- (1) Polyadelphous (2) Monoadelphous
 (3) Diadelphous (4) Polyandrous

109. Which is related to Trifolium

- (1) $\underline{G}_{(3)}$ (2) $\underline{G}_{(2)}$
 (3) $\underline{G}_1$ (4) $\underline{G}_3$

110. Outermost covering of endosperm which separates it from embryo in monocots is

- (1) Proteinous layer (2) Scutellum
 (3) Starchy layer (4) All of these

111. Given below are two statements :

Statement I:

Fibrous root system present in monocotyledonous

Statement II: Roots arise from parts of

plants other than radicle are called adventitious roots

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are incorrect
 (2) Statement I is correct but Statement II is incorrect
 (3) Statement I is incorrect but Statement II is correct
 (4) Both Statement I and Statement II are correct.

112. A scar in seed coat through which seeds are attached to the fruit is known as

- (1) Micropyle (2) Radicle
 (3) Plumule (4) Hilum

113. Which of the following family has tricarpeal, syncarpous, ovary superior with many ovules and axile placentation:

- (1) Liliaceae (2) Solanaceae
 (3) Fabaceae (4) All of these

114. Phyllode (petiole modified) is present in:

- (1) Australian Acacia
 (2) Opuntia (3) Asparagus
 (4) Euphorbia

115. Keel is characteristic of the flowers of:

- (1) Bean (2) Gulmohur
 (3) Cassia (4) Calotropis

116. Which statement is true among the following:

- (a) When the stamens are united into more than two bundles this condition is seen in Citrus.
 (b) When more than one carpel is present it can be free as in tomato.
 (c) Petiole in Australian acacia expands become green and synthesised food.
 (d) Irregular symmetry present in canna
 (1) a, b and c (2) b, c and d
 (3) Only b (4) a, c and d

117. A drupe develops in

- (a) wheat (b) pea
(c) tomato (d) mango

118. Match the Column -I with Column -II.

Column I	Column II
A. $\% \text{O} \begin{smallmatrix} \nearrow \\ \perp \end{smallmatrix} K_{(5)} C_{1+2+(2)} A_{(9)+1} G_1$	1. Brassicaceae
B. $\oplus \text{O} \begin{smallmatrix} \nearrow \\ \perp \end{smallmatrix} K_{(5)} C_{(5)} A_5 G_2$	2. Liliaceae
C. $\oplus \text{O} \begin{smallmatrix} \nearrow \\ \perp \end{smallmatrix} P_{(3+3)} A_{3+3} G_3$	3. Fabaceae
D. $\oplus \text{O} \begin{smallmatrix} \nearrow \\ \perp \end{smallmatrix} K_{2+2} C_4 A_{2-4} G_{(2)}$	4. Solanaceae

Select the correct answer from the options given below.

	A	B	C	D
(a)	3	4	2	1
(b)	1	2	3	4
(c)	2	3	4	1
(d)	4	2	1	3

119. Cymose inflorescence is identified by:

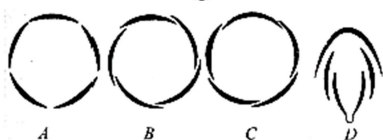
- (1) Basipetal arrangement of flowers on the main axis (peduncle)
- (2) The limited growth of the main axis as main axis terminates in a flower
- (3) Both (1) and (2)
- (4) Presence of sessile flower

120. Select the correct statement about mustard :

- i. Alternate phyllotaxy
- ii. Superior ovary
- iii. Tetradynamous stamen
- iv. Variation in length of filament
- v. Apocarpous ovary

- (1) Only iii
- (2) Only ii, iii and v
- (3) Only i, ii, iii and iv
- (4) All are correct

121. The following diagrams represent the types of aestivation in corolla. Identify the correct combination of labelling.



- (1) A-Valvate, B- Twisted, C-Vexillary, D-

Imbricate

(2) A-Valvate, B-Vexillary, C- Twisted, D-Imbricate

(3) A-Valvate, B-Imbricate, C- Twisted, D-Vexillary

(4) A-Valvate, B- Twisted, C-Imbricate, D-Vexillary

122. Pneumatophores show which of the following type of growth:

- (1) Positive geotropic
- (2) Negative geotropic
- (3) Geotropic neutral
- (4) Diageotropic

123. Given below are two statements:

Statement I:

In parietal placentation, the ovule develop on the inner wall of ovary.

Statement II:

When stamens are attached to parianth they are epipetalous as in lily.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are incorrect
- (2) Statement I is correct but Statement II is incorrect
- (3) Statement I is incorrect but Statement II is correct
- (4) Both Statement I and Statement II are correct.

124. The plumule and radicle in monocot seed are enclosed in sheaths which are _____ and _____ called respectively:

- (1) Coleoptile and scutellum
- (2) Scutellum and coleorhiza
- (3) Coleoptile and coleorhiza
- (4) Coleorhiza and coleoptile

125. Match the following and choose the correct option:

Group A

Group B

- (a) Aleurone layer i. Without fertilization
 (b) Parthenocarpic fruit ii. Covering of endosperm
 (c) Ovule iii. Double fertilization
 (d) Endosperm iv. Seed

- (1) a - i b - ii c - iii d - iv
 (2) a-ii, b - i c - iv d - iii
 (3) a-iv, b - ii c - i d - iii
 (4) a-ii, b - iv c - i d - iii

126. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Leaf are converted into tendril for climbing as in pea or into spines for defence as in cacti.

Reason (R): In compound leaf incisions of the lamina reach upto the midrib breaking into a number of leaflets.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 (2) (A) is true but (R) is false
 (3) (A) is false but (R) is true
 (4) Both (A) and (R) are true and (R) is the correct explanation of (A)

127. The correct floral formula of chilli is

- (1) $\oplus \overline{\sigma} K_{(5)} C_{(5)} A_5 G_{(2)}$
 (2) $\oplus \overline{\sigma} K_{(5)} C_{(5)} A_{(5)} G_2$
 (3) $\oplus \overline{\sigma} K_5 C_5 A_{(5)} G_2$
 (4) $\oplus \overline{\sigma} K_{(5)} C_5 A_5 G_{(2)}$

128. Which of the following is a correct pair?

- (1) Cuscuta - Parasite
 (2) Dischidia - Insectivorous
 (3) Opuntia - Predator
 (4) Capsella - Hydrophyte

129. Match the following and indicate which is correct?

- (1) Cucurbitaceae - Orange
 (2) Malvaceae - Cotton
 (3) Brassicaceae - Wheat
 (4) Leguminosae - Sunflower

130. Pulses are obtained from

- (1) Fabaceae (2) Asteraceae
 (3) Poaceae (4) Solanaceae

131. Epipetalous and syngenesious stamens occur in

- (1) Solanaceae (2) Brassicaceae
 (3) Fabaceae (4) Asteraceae

132. Botanical name of cauliflower is

- (a) Brassica oleracea var. capitata
 (b) Brassica campestris
 (c) Brassica oleracea var. botrytis
 (d) Brassica oleracea var. gemmifera

133. Suberin layer is found in :

- (1) Conjunctive tissue
 (2) Pericycle (3) Hypodermis
 (4) Innermost layer of cortex of root

134. Intercalary meristems are:

- (1) Present in grasses
 (2) Primary meristem
 (3) Secondary meristem
 (4) Both 1 and 2

135. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Both apical and intercalary meristems are primary meristems.

Reason (R): They appear early in life of plant and contributes to the formation of primary plant body.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 (2) (A) is true but (R) is false
 (3) (A) is false but (R) is true
 (4) Both (A) and (R) are true and (R) is the correct explanation of (A)

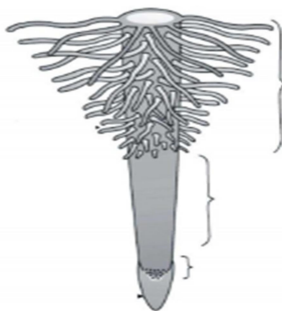
136. Simple tissue that don't contain chloroplasts:

- (1) Parenchyma (2) Collenchyma
 (3) Sclerenchyma (4) Xylem

137. Which of the following is not an element of xylem in gymnosperms

- (1) Sieve tube (2) Vessels
(3) Xylem fibres
(4) Xylem parenchyma

138. How many statements are correct with reference to figure:



- (a) It is present in stem, root
(b) It has a structure which absorbed the water
(c) It has cell division area
(d) Above structure is formed by embryonic radicle

- (1) 3 (2) 2
(3) 4 (4) 1

139. Edible part in mango is

- (1) mesocarp (2) epicarp
(3) endocarp (4) epidermis

140. Given below are two statements:

Statement I:

In dicotyledonous leaf abaxially placed palisade parenchyma is made up of elongated cells which are arranged only vertically.

Statement-II:

In monocotyledonous leaf mesophyll is not differentiated into palisade and spongy parenchyma.

Choose the correct answer from the option given below:

- (1) Both Statement I and Statement II are incorrect
(2) Statement I is correct but Statement II is incorrect
(3) Statement I is incorrect but Statement II is correct
(4) Both Statement I and Statement II are

correct

141. Phellem and phellogen respectively represents:

- (1) Secondary cortex and cork
(2) Cork and secondary cortex
(3) Cork cambium and cork
(4) Cork and cork cambium

142. The coconut water and the edible part of coconut are equivalent to

- (1) endosperm (2) endocarp
(3) mesocarp (4) embryo

143. Starch sheath is a endodermis which rich starch grains found in:

- (1) Monocot root (2) Dicot root
(3) Dicot stem (4) Monocot stem

144. Vascular bundle is conjoint, open and with endarch protoxylem found in:

- (1) Monocot root (2) Dicot root
(3) Dicot stem (4) Monocot stem

145. Which of the following structure constitute stele:

- (1) Pericycle (2) Vascular bundles
(3) Pith (4) All of these

146. The pith is small or inconspicuous in :

- (1) Monocot root (2) Dicot root
(3) Dicot stem (4) Monocot stem

147. The cork cambium, cork and secondary cortex are collectively called:

- (1) Phellem (2) Phelloderm
(3) Phellogen (4) Periderm

148. Select the incorrect statement from the followings:

- (1) Open conjoint, collateral or bicollateral vascular bundles found in monocot stem
(2) All the tissues on the innerside of the endodermis such as pericycle, vascular bundles and pith in dicot root constitute the stele
(3) Polyarch vascular bundles found in monocot root
(4) Phloem parenchyma is absent in monocot stem

149. Match the following columns :

- | | |
|--------------------|----------------------------------|
| a. Vessel | i. Tapering ends |
| b. Tracheids | ii. Large central cavity |
| c. Sclereids | iii. Special parenchymatous cell |
| d. Companion cells | iv. Very narrow cavity |

- (1) a-iii, b-i, c-iv, d-ii
 (2) a-ii, b-i, c-iv, d-iii
 (3) a-i, b-ii, c-iv, d-iii
 (4) a-iv, b-iii, c-ii, d-i

150. Generally secondary growth takes place in which plants:

- (1) Dicot and monocot
 (2) Dicot and gymnosperm
 (3) All angiosperm and Gymnosperm
 (4) Only in dicot

151. Floral formula of tomato/ tobacco

- (1) $\oplus \text{ } \overline{\text{K}}_{4-5} \text{ } \overline{\text{A}}_{10} \text{ } \overline{\text{G}}_{(2)}$
 (2) $\oplus \text{ } \overline{\text{K}}_{2+2} \text{ } \overline{\text{C}}_4 \text{ } \overline{\text{A}}_{2+4} \text{ } \overline{\text{G}}_1$
 (3) $\oplus \text{ } \overline{\text{K}}_{(5)} \text{ } \overline{\text{C}}_{(5)} \text{ } \overline{\text{A}}_5 \text{ } \overline{\text{G}}_{(2)}$
 (4) $\oplus \text{ } \overline{\text{K}}_{(5)} \text{ } \overline{\text{C}}_{(5)} \text{ } \overline{\text{A}}_5 \text{ } \overline{\text{G}}_{(2)}$

152. Large number of vascular bundle found in monocot stem each surrounded by:

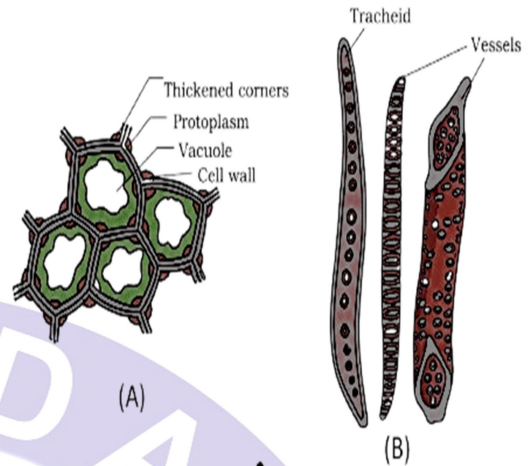
- (1) Collenchymatous multilayered sheath
 (2) Parenchymatous single layered sheath
 (3) Sclerenchymatous bundle sheath
 (4) None of these

153. Read the statements given below carefully and find out the correct ones

- a. Bast fibres are made of sclerenchymatous cells
 b. Bast fibres are unbranched & with pointed apex
 c. Epidermal cells are parenchymatous with small amount of cytoplasm
 d. Functions of companion cells are controlled by nucleus of the sieve tubes

- (1) a, b, c only (2) a, b only
 (3) a, b, c, d (4) c, d only

154. Identify A, B, C and D in the following diagrams:



- (1) A-Xylem, B-Phloem, C-Collenchyma and D-Companion cells
 (2) A-Collenchyma, B-Xylem, C-Sclerenchyma and D-Lumen
 (3) A-Collenchyma, B-Sclerenchyma, C-Xylem and D-Companion cells
 (4) A-Companion cells, B-Phloem, C-Perenchyma and D-Lumen

155. Given below are two statements:

Statement 1:

Trichomes in the shoot system are usually unicellular

Statement-II:

Trichomes may be branched or unbranched
 Choose the correct answer from the option given below:

- (1) Both Statement I and Statement II are incorrect
 (2) Statement I is correct but Statement II is incorrect
 (3) Statement I is incorrect but Statement II

is correct

(4) Both Statement I and Statement II are correct.

156. Apical meristems produce :

- (1) Secondary tissue
- (2) Permanent tissue
- (3) Primary tissue
- (4) Both 2 & 3

157. The pith is large and well developed in:

- (1) Monocot root (2) Dicot root
- (3) Monocot stem (4) None

158. The parenchymatous cells which lie between the xylem and the phloem are called:

- (1) Conjunctive tissue
- (2) Casparian strips
- (3) Cambium
- (4) Albuminous cells

159. One of the following is absent in the monocots:

- (1) Cambium (2) Companion cells
- (3) Sieve tubes (4) Phloem

160. Sclerenchymatous hypodermis is characteristics of:

- (1) Dicot stem
- (2) Monocot stem
- (3) Monocot as well as dicot stem
- (4) Hydrophytes

161. Which of the following is a part of the epidermal tissue system:

- (1) Epidermal cells (2) Stomata
- (3) Trichomes (4) All of these

162. In monocot leaf which type of guard cell present:

- (1) Bean shape (2) Dumb-bell shaped
- (3) Kidney shape (4) All of these

163. Casparian bands (strips) are characteristic feature of:

- (1) Epidermis (2) Epiblema
- (3) Exodermis (4) Endodermis

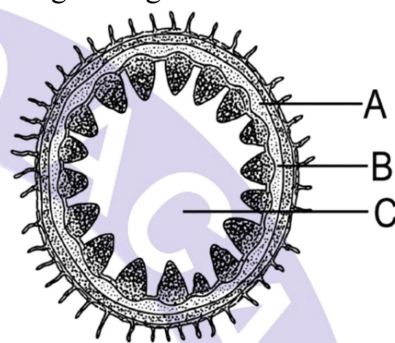
164. The xylem in which protoxylem lies towards the centre (pith) and metaxylem lies towards the periphery is called:

- (1) Endarch (2) Exarch
- (3) Mesarch (4) All of these

165. Examples of lateral meristem:

- (1) Fascicular vascular cambium
- (2) Interfascicular cambium
- (3) Cork-cambium (4) All of these

166. In the given figure A and B are:



- (1) A-Parenchyma, B-Epidermis, C-Ground tissue
- (2) A-Endodermis, B-Parenchyma, C - Pith
- (3) A-Parenchyma, B-Phloem, C-Ground tissue
- (4) A-Parenchyma, B- Pericycle, C - Pith

167. Phloem fibres are generally absent in:

- (1) Primary phloem (2) Secondary phloem
- (3) Monocot plants (4) 1 and 3

168. Isolated metabolic reactions outside the body of an organism in a test tube is:

- (1) Living (2) Non-living
- (3) Neither living nor non-living
- (4) None of these

169. Which one of the following plants shows vexillary aestivation and diadelphous stamens?

- (1) Pisum sativum (2) Allium cepa
- (3) Solanum nigrum (4) Colchicum autumnale

170. Vexillary aestivation is characteristic of the family

- (1) Fabaceae (2) Asteraceae
- (3) Solanaceae (4) Brassicaceae

171. The morphological nature of the edible part of coconut is

- (1) perisperm (2) cotyledon

(3) endosperm (4) pericarp

172. In onion the reduced disc like underground stem is :-

- (1) Root (2) Rhizome
(3) Bulb (4) Tuber

173. Stem modified into leaf like structure and leaves are changed into spines

- (1) Phyllode (2) Tuber
(3) Phylloclade (4) All the above

174. What is the eye of potato ?

- (1) Axillary bud
(2) Accessory bud
(3) Adventitious bud
(4) Apical bud

175. In Ruscus, the modification is :-

- (1) Phyllode (2) Cladode
(3) Offset (4) Sucker

176. In turmeric, stem is a :-

- (1) Tuber (2) Bulb
(3) Rhizome (4) Corm

177. Edible part of potato is:-

- (1) Inflorescence (3) Roots
(2) Leaves (4) Stem

178. Diadelphous condition is common in :-

- (1) Solanaceae (2) Cruciferae
(3) Liliaceae (4) Fabaceae

179. Pulses yielding main family of plants is :-

- (1) Solanaceae (2) Brassicaceae
(3) Liliaceae (4) Fabaceae

180. Bean and gram belong to the family :-

- (1) Liliaceae (2) Fabaceae
(3) Solanaceae (4) Cruciferae