GIRI SIR'S CLASSES

HATIGAON, GUWAHATI

ASSERTION AND REASON - BIOLOGY

Class 10 - Science

1. **Assertion (A):** Lungs always contain a residual volume of air.
   Reason (R): It provides sufficient time for oxygen to be absorbed and for carbon dioxide to be released.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

2. **Assertion (A):** Human body produces highly toxic substances, which if not eliminated may cause the death.
   Reason (R): Excretory substance removes nitrogenous waste from the body.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

3. **Assertion (A):** Excretion is the biological process by which harmful wastes are removed from an organism's body.
   Reason (R): The mode of excretion is completely the same in both unicellular and multicellular organisms.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

4. **Assertion (A):** Phloem helps in translocation of food from the leaves.
   Reason (R): Phloem provides mechanical support to plant.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

5. **Assertion (A):** Plants lack excretory organs.
   Reason (R): Plants usually absorbs essential nutrients.

   a) Both A and R are true and R is correct explanation of the assertion.
   b) Both A and R are true and R is not correct explanation of the assertion.
   c) A is true but R is false.
   d) A is false but R is true.

6. **Assertion (A):** Mitochondria help in photosynthesis.
   Reason (R): Mitochondria have enzymes for dark reaction.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

7. **Assertion (A):** In human beings, when air is taken into the body through the nostrils and passed through the throat, the air passage does not collapse.
   Reason (R): Rings of cartilage present in the throat ensure that the air passage does not collapse.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

8. **Assertion (A):** Blood clotting prevents excessive loss of blood.
   Reason (R): Blood clotting is due to blood plasma and white blood cells present in the blood.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

9. **Assertion (A):** Photosynthesis takes place in green parts of the plants.
   Reason (R): Photosynthesis always takes place in leaves.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

10. **Assertion (A):** Photorespiration decreases net photosynthesis.
    Reason (R): Rate of respiration in dark and light is almost same in all plants.

    a) Both A and R are true and R is the correct explanation of A.
    b) Both A and R are true but R is not the correct explanation of A.
    c) A is true but R is false.
    d) A is false but R is true.

11. **Assertion (A):** In plants, there is no need for specialised respiratory organs.
    Reason (R): Plants do not have great demands for gaseous exchange.

    a) Both A and R are true and R is correct explanation of the assertion.
    b) Both A and R are true but R is not the correct explanation of the assertion
    c) A is true but R is false.
    d) A is false but R is true.

12. **Assertion (A):** Walls of the intestine have numerous villi.
    Reason (R): These villi increase the surface area of digestion.

    a) Both A and R are true and R is the correct explanation of A.
    b) Both A and R are true but R is not the correct explanation of A.
    c) A is true but R is false.
    d) A is false but R is true.

13. **Assertion (A):** In humans, there is a complex respiratory system.
    Reason (R): Human skin is impermeable to gases.

    a) Both A and R are true and R is the correct explanation of A.
    b) Both A and R are true but R is not the correct explanation of A.
    c) A is true but R is false.
    d) A is false but R is true.

14. **Assertion (A):** Plants have low energy needs.
    Reason (R): Plant bodies have large proportion of dead cells.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

15. **Assertion (A):** The plants store some of the waste products in their body parts.
Reason (R): Raphides are the solid waste products of plants.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

16. **Assertion (A):** During the physiology of excretion, deamination does take place in the liver.
Reason (R): Deamination is a process to make use of excess amino acids which cannot be incorporated into protoplasm.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

17. **Assertion (A):** Plants excrete various waste products during their life processes.
Reason (R): They produce urea just like humans.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

18. **Assertion (A):** Bile is essential for the digestion of lipids.
Reason (R): Bile juice contains enzymes.

a) Both A and R are true and R is correct explanation of the assertion.
b) Both A and R are true but R is not the correct explanation of the assertion
c) A is true but R is false.
d) A is false but R is true.

19. **Assertion (A):** Haemoglobin is the respiratory pigment in human beings.
Reason (R): It transports oxygen in the human body.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

20. **Assertion (A):** Respiration is a biochemical process opposite to photosynthesis.
Reason (R): Energy is released during respiration.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

21. **Assertion (A):** Left atrium receives oxygenated blood from pulmonary vein.
Reason (R): Right atrium transfers deoxygenated blood to the right ventricle, which pumps it to the lungs for oxygenation.

a) Both A and R are true and R is the correct
b) Both A and R are true but R is not the

explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

22. **Assertion (A):** In anaerobic respiration, one of the end product is alcohol.
Reason (R): There is an incomplete breakdown of glucose.

a) Both A and R are true and R is correct explanation of the assertion.

b) Both A and R are true but R is not the correct explanation of the assertion.

c) A is true but R is false.

d) A is false but R is true.

23. **Assertion (A) :** Dark phase is independent of light, hence called light independent phase.
Reason (R) : Dark phase takes place at night.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

24. **Assertion (A):** In woody plants, gaseous exchange occurs through lenticels.
Reason (R): Lenticels are specialised cells found along with stomata on the stem of woody plants.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

25. **Assertion (A):** The muscular walls of ventricles are thicker than auricles.
Reason (R): This helps in preventing the backflow of blood.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

26. **Assertion (A):** Humans are not truly aerobic.
Reason (R): They produce lactic acid anaerobically.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

27. **Assertion (A):** HCl converts pepsinogen into active enzyme pepsin.
Reason(R): Pepsin converts protein into proteoses and peptones.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

28. **Assertion (A):** The anaerobic respiration which takes place in yeast, has one of the end products as an acid.
Reason (R): During anaerobic respiration, there is incomplete breakdown of glucose.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

29. **Assertion (A):** Ventricles have thicker walls than auricles.
Reason (R): Ventricles have to pump blood into various organs with great pressure.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

30. **Assertion (A) :** The effect of root pressure in transport of water is more important at night.
Reason (R) : During day, stomata is open, transpiration takes place which help in transport of water.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

31. **Assertion (A):** Plant hormones are growth regulators.
Reason (R): Growth regulators promote or inhibit growth.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

32. **Assertion (A):** Plants lack the nervous system, but they do coordinate.
Reason (R): It is so because of hormones.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

33. **Assertion (A):** Phototropism is caused by auxin.
Reason (R): When light is coming from one side of the plant, auxin diffuses towards the shady side of the shoot.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

34. **Assertion (A):** Cyton region of nerve fibre collects information for the brain.
Reason (R): Nerve fibres can either have or lack the myelin sheath.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

35. **Assertion (A):** Gibberellins induce internodal growth in dwarf plant varieties.
Reason (R): Gibberellins when applied to normal plants, it increases the length of the plant.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

36. **Assertion (A):** A person has lost most of its intelligence memory and judgment.
Reason (R): A person has operated a tumour located in the cerebrum.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

37. **Assertion (A) :** Damage to the medulla oblongata causes death.
Reason (R) : Medulla oblongata controls involuntary functions of the body.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

38. **Assertion (A):** The effect of auxin hormone on the growth of root is exactly opposite to that on a stem.
Reason (R): Auxin hormone increases the rate of growth in root and decreases the rate of growth in stem.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

39. **Assertion (A):** Phototropism is a directional growth movement.
Reason (R): It occurs in the direction of light.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

40. **Assertion (A):** Seismonastic movement shown by Mimosa pudica plant.
Reason (R): It is due to change in turgidity of cells of pulvinus.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

41. **Assertion (A):** Yeast multiplies in sugar.
Reason (R): Sugar is made of sucrose which provides energy for sustaining all life activities.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

42. **Assertion (A):** Vasectomy is a surgical method of birth control.
Reason (R): In a vasectomy, a small portion of the oviduct is cut or tied properly.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

43. **Assertion (A):** Vaginal pills contain spermicides.
Reason (R): Spermicides kill the sperms.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.
d) A is false but R is true.

44. **Assertion (A):** An embryo is formed from fertilized egg.
Reason (R): A monocot embryo comprises embryonal axis with two cotyledons.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

45. **Assertion (A):** Fusion of gametes gives rise to a single cell called zygote.
Reason (R): Zygote is a fertilised ovum.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

46. **Assertion (A):** Self-pollination occurs when the pollen grains from the anther of a flower are transferred to the stigma of same flower or another flower on the same plant.
Reason (R): Insects and wind help in autogamy.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

47. **Assertion (A):** Amoeba takes in food using finger like extensions of the cell surface.
Reason (R): In all unicellular organisms, the food is taken in by the entire cell surface.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

48. **Assertion (A):** Internal fertilisation occurs in mammals and birds.
Reason (R): External fertilisation occurs in reptiles, amphibians and fishes.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

49. **Assertion (A):** Unisexual flowers have separate male and female flowers whereas a typical monocot embryo comprises an embryonal axis with single cotyledon.
Reason (R): Cucumber, pumpkin and watermelon are examples of unisexual flowers.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

50. **Assertion (A):** Meiosis takes place only in gametes.
Reason (R): To restore the total number of chromosomes in offspring.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

51. **Assertion (A):** Sexual reproduction involves two parents of different sexes, a male and a female, which produce male and female gametes respectively.
Reason (R): The male and female gametes fuse to form a zygote in sexual reproduction, which develops into a new individual.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

52. **Assertion (A):** In the morula stage, cells divide without increases in size.
Reason (R): Zona pellucida remain undivided till cleavage is complete.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

53. **Assertion (A):** Double fertilisation is unique to angiosperms.
Reason (R): Triple fusion occurs in both fertilization.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

54. **Assertion (A):** The testes are present outside the abdominal cavity of the body.
Reason (R): Sperm formation requires a lower temperature than the normal body temperature.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

55. **Assertion (A):** Clones of offspring of an organism formed an asexual reproduction.
Reason (R): Clones have exact copies of DNA as their parent.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

56. **Assertion (A):** Seeds are matured ovules.
Reason (R): The part of seed which contains stored food for baby plant is called cotyledon.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

57. **Assertion (A):** During fertilization, the only head of the spermatozoa enters the egg.
Reason (R): If several spermatozoa hit the egg at the same time, all can enter the egg.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

58. **Assertion (A) :** Lumen of fallopian tube is lined by ciliated epithelium..
Reason (R) : Ciliated epithelium helps in moving the zygote towards uterus for implantation.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

59. **Assertion (A):** Testes in human males are located outside the abdominal cavity in scrotum.
Reason (R): Scrotum provides a lower temperature than the normal body temperature for sperm formation.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

60. **Assertion:** Colonies of yeast multiply in sugar solution.
Reason: Sugar is made of sucrose which provides energy for sustaining all life activities.

a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
c) Assertion is correct statement but reason is wrong statement.
d) Assertion is wrong statement but reason is correct statement.

61. **Assertion:** Dominant allele is an allele whose phenotype expresses even in the presence of another allele of that gene.
Reason: It is represented by a capital letter, e.g. T.

a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
c) Assertion is correct statement but reason is wrong statement.
d) Assertion is wrong statement but reason is correct statement.

62. **Assertion (A):** In humans, males play an important role in determining the sex of the child.
Reason (R): Males have two X chromosomes.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

63. **Assertion (A):** Genes present in every cell of an organism control the traits of the organisms.
Reason (R): Gene is specific segment of DNA occupying specific position on a chromosome.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

64. **Assertion (A):** A geneticist crossed two plants and got 50% tall and 50% dwarf progenies.
Reason (R): This cross follows Mendelian law as one of the parent plant might be heterozygous.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.
d) A is false but R is true.

65. **Assertion (A):** The sex of the children will be determined by chromosome received from the father.
Reason (R): A human male has one X and one Y chromosome.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

66. **Assertion (A):** A child which has inherited X chromosome from father will develop into a girl child.
Reason (R): Girl child inherits X chromosome from father and Y chromosome from mother.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

67. **Assertion (A):** A tall plant which always produces tall offsprings is considered heterozygous for height and is represented by genotype (Tt).
Reason (R): A tall plant which always produces tall offspring is homozygous dominant and will always produce only one type of gamete (T).

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

68. **Assertion (A):** In humans, male (or father) is responsible for sex of the baby which is born.
Reason (R): Y chromosomes are present in only male gametes or sperms.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

69. **Assertion (A):** The sex of a child is determined by the mother.
Reason (R): Humans have two types of sex chromosomes: XX and XY.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

70. **Assertion (A):** If blood group of both mother and father is ‘O’ then the blood group of children will also be O.
Reason (R): Blood group in humans is determined by many alleles of a gene viz. I^A, I^B, I^O.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

71. **Assertion (A):** Plastic, glass and metal wastes keep accumulating in our surroundings and their amount never reduces with time.
Reason (R): Plastic, glass and metal wastes are non-biodegradable and they cannot be decomposed by microorganisms.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.
d) A is false but R is true.

72. **Assertion (A):** Gases used in cooling devices can lead to depletion of ozone layer of atmosphere.
Reason (R): Carbon monoxide which is widely used as coolant in refrigerator reacts with ozone and destroys it.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

73. **Assertion (A):** Supersonic jets cause pollution as they thin out ozone.
Reason (R): Depletion of ozone cause a greenhouse effect.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

74. **Assertion (A):** Biotic components of ecosystem continuously require energy to carry on life processes.
Reason (R): Abiotic components are the non-living factors of the ecosystem.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

75. **Assertion (A):** Green plants of the ecosystem are the transducers.
Reason (R): Producers trap the radiant energy of the sun and the change it into chemical energy.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.