

1. Growth is:-
  - (1) Increase in size
  - (2) Increase in weight
  - (3) Synthesis of new protoplasm
  - (4) All the above
2. Father of gerontology is:-
  - (1) Trembley
  - (2) Hayflick
  - (3) Korenchevsky
  - (4) Sachs
3. Branch of biology dealing with ageing is:-
  - (1) Gerontology
  - (2) Psychobiology
  - (3) Dermatology
  - (4) Kalology
4. Auxetic growth occurs in:-
  - (1) Humen beings
  - (2) Frog
  - (3) Lizard
  - (4) Nematodes
5. Ageing pigment is:-
  - (1) Melanin
  - (2) Biliverdin
  - (3) Lipofuscin
  - (4) Collagen
6. Auxetic growth is characterized by:-
  - (1) Increase in cell- number
  - (2) Growth without increase in cell number
  - (3) Both increase in cell number and cell-growth
  - (4) Expansion in transverse direction
7. Accretionary growth is due to activity of:-
  - (1) Reserve cells
  - (2) Meristamatic cells
  - (3) Differentiated cells
  - (4) None
8. Multiplicative growth is found in:-
  - (1) Old age
  - (2) Adult hood
  - (3) Embryo
  - (4) Child hood
9. Maximum growth in human foetus occur at the age of:-
  - (1) Four month
  - (2) Two months
  - (3) Six months
  - (4) Eight months
10. Autotomy is recorded in:-
  - (1) Legs in crabs
  - (2) Tails of lizard
  - (3) Viscera in holothurian echinoderms
  - (4) All the above
11. Growth hormone activity is:-
  - (1) Unaffected by thyroxine
  - (2) Increased by thyroxine
  - (3) Decreased by thyroxine
  - (4) None of the above
12. Auxetic growth is:-
  - (1) Increase in cell-volume only
  - (2) Increase in cell-number only
  - (3) Increase in fatty tissue
  - (4) Increase in intercellular material
13. Ageing starts with disappearance of:-
  - (1) Spleen
  - (2) Pituitary gland
  - (3) Thymus gland
  - (4) parathyroid gland
14. Which tissue of mammalian have least power of regeneratin:-

- (1) Skin epithelium  
 (2) Nervous tissue of brain  
 (3) Endothelium of blood vessels  
 (4) None
15. What is true about regeneration:-  
 (1) Tail in lizard           (2) Beak in birds  
 (3) Fins in fish           (4) All the above
16. In sponges, essential for regeneration:-  
 (1) Mouth  
 (2) Choanoderm  
 (3) Pinacoderm  
 (4) Both choanoderm and pinacoderm
17. Which is not effect of ageing in men:-  
 (1) Enlargement of muscles due to decreased exercise  
 (2) Decline in capacity of urinary bladder  
 (3) Decline in cell volume  
 (4) Enlargement of heart
18. Approximate age of sexual maturity in human beings is:-  
 (1) 10-14 years           (2) 8-11 years  
 (3) 11-16 years           (4) 10-13 years
19. Apoptosis is:-  
 (1) Necrotic death of a cell  
 (2) Programmed death of a cell  
 (3) Shrinking of apoplast and ageing process  
 (4) A process of shedding leaves
20. Substances synthesized during growth are:-  
 (1) Protoplasmic  
 (2) Apoplasmic  
 (3) Protoplasmic and apoplasmic  
 (4) Nucleic acid
21. Crustaceans, spiders and insects are able to regenerate their:-  
 (1) Head                   (2) Thorax  
 (3) Limbs                   (4) Abdomen
22. Broken arms are regenerated in:-  
 (1) Human beings       (2) Echinoderms  
 (3) Mollusca           (4) Fishes
23. Morphallaxis is reported in:-  
 (1) Porifers  
 (2) Coelenterata and flat worms  
 (3) Nemarateans and some ascidians  
 (4) All the above
24. Salamander and axolotal larva regenerate:-  
 (1) Limbs eye structures and intestine  
 (2) Jaws  
 (3) External gills  
 (4) All the above
25. Power of regeneration is not found in:-  
 (1) Hirudinea           (2) Polycheta  
 (3) Oligochaeta       (4) All the above
26. Which vitamins are helpful in growth:-  
 (1) Vitamin-A           (2) Vitamin-B<sub>2</sub>  
 (3) Vitamin-C and D   (4) All the above
27. Growth curve in animals is:-  
 (1) Delta               (2) Sigmoid  
 (3) Alpha               (4) Beta
28. Match the column-I with column-II & choose the correct match of the alphabets:-

Column-I		Column-II	
(A)	Accretionary Growth	(i)	Science of ageing
(B)	Gerontology	(ii)	
(C)	Somatic Mutation theory	(iii)	Self mutilation Erythropoiesis
(D)	Autotomy	(iv)	Cell to deteriorate & malfunction

A B C D

- (1) iii ii iv i  
 (2) iv iii ii i  
 (3) i ii iii iv  
 (4) iii I iv ii

29. In human beings, which part shows the minimum increase in weight from birth to adulthood

- (1) Muscles (2) Skelton  
 (3) Brain (4) fat

30. Adult female tend to have less weight than adult male due to lesser development of :-

- (1) Muscles  
 (2) Skeleton  
 (3) Both muscles and skeleton  
 (4) Fat

31. Which is called "Clock of Ageing":-

- (1) Thyroid (2) Thymus  
 (3) Adrenal gland (4) Pituitary gland

32. Factors controlling regeneration seem to be:-

- (1) Hormonal  
 (2) Neural

- (3) Hormonal and neural both  
 (4) None

33. Regeneration is possible in tadpoles for amputate:-

- (1) Tail and hind limbs (2) Forelimbs  
 (3) Jaw and eyes (4) Intestine

34. Regeneration of a limbs or tail is an example of:-

- (1) Compensatory hypertrophy  
 (2) Epimorphosis  
 (3) Morphallaxis  
 (4) Autotomy

35. Compensatory hepertrophy is found in:-

- (1) Mammalian liver  
 (2) Mammalian kidney  
 (3) Brain  
 (4) Both (1) and (2)

36. The science of agening is called:-

- (1) Chronology (2) Odontology  
 (3) Gynaecology (4) Gerontology

37. Ageing in mammals including man may be due to:-

- (1) Adverse changes in the environment  
 (2) Interaction between hereditary factor genes and the environment  
 (3) Mutation and stress  
 (4) All of these  
 (5)

38. The following cells can not be grown under tissue culture condition:-

- (1) Hela cells (2) Leucocytes  
 (3) Kidney cells (4) Nerve cells

39. Which one of the body building material:-  
 (1) Protein (2) Sugar  
 (3) Mineral salts (4) Fat
40. Allometric growth is:-  
 (1) Increase in the number of cells with growth of individual  
 (2) Growth due to multiplication of constituent cells at constant rate  
 (3) Difference in the rate of growth of different parts of the body  
 (4) Growth due to special reserve cells of the body
41. The ability of animals to regenerate the lost parts of the body was reported by:-  
 (1) Karlson (2) Trembley  
 (3) patten (4) Storer
42. When volume of body increases due to increase in the volume of cells, not in the number of cells then it is called 'auxetic growth', such growth is found in:-  
 (1) Lizard (2) Men  
 (3) Frogs (4) Nematodes
43. When animal has capacity to develop whole body from a small portion, the phenomenon is called:-  
 (1) Regeneration (2) Morphallaxis  
 (3) Epimorphosis (4) Restoration
44. Morphallaxis is:-  
 (1) Reconstruction of the whole body  
 (2) Growth of injury  
 (3) Healing of injury  
 (4) Regeneration with the help of blastema
45. Epimorphosis is:-  
 (1) Degeneration of old organs  
 (2) Regeneration of lost body parts  
 (3) Regeneration of whole body from small portion  
 (4) None of these
46. Regeneration of a limb or tail is an example of:-  
 (1) Compensatory hypertrophy  
 (2) Epimorphosis  
 (3) Morphallaxis  
 (4) Autotomy
47. Which of the following part of human body exhibits regeneration:-  
 (1) Spleen (2) Kidney  
 (3) Brain (4) Liver
48. Blastema formation takes place in:-  
 (1) Epimorphosis type of regeneration  
 (2) Morphallaxis type of regeneration  
 (3) Exponential growth  
 (4) Deaccelerating growth
49. Repair by cell division of the damaged tissue is:-  
 (1) Epimorphosis regeneration  
 (2) Morphallaxis regeneration  
 (3) Exponential growth  
 (4) Deaccelerating growth
50. Which of the following is true during agein:-  
 (1) Decrease in blood urea and GFR

- (2) Decrease in calcium content of arteries and cartilage
- (3) Decrease in cholesterol of cornea and iris
- (4) Increase in calcium content of arteries and cartilage
51. Ageing is caused due to disappearance of:-
- (1) Thyroid                      (2) Parathyroids
- (3) Thymus                      (4) pituitary
52. Auxetic growth is an:-
- (1) Increase in cell volume only
- (2) Increase in cell number only
- (3) Increase in fatty tissue
- (4) Increase in intercellular material
53. Life span of Parrot is-
- (1) 20 years                      (2) 55 years
- (3) 40 years                      (4) 140 years
54. Thanatology is the science that deals with:
- (1) Death in all its aspects
- (2) Solving paternity of child
- (3) Identification of living
- (4) Detecting of lie
55. Based on cellular mechanisms there are two major types of regeneration found in the animals. Which one of the following is the correct example of the type mentioned?
- (1) Morphallaxis- Regeneration of two transversely cut equal pieces of a hydra into two small Hydra.
- (2) Epimorphosis- Replacement of old and dead erythrocytes by the new ones.
- (3) Morphallaxis- Healing up of a wound in the skin.
- (4) Epimorphosis- Regeneration of crushed and filtered out pieces of a planaria into as many new planarians.
56. The usual shape of growth curve is:
- (1) Sigmoid
- (2) zig-zig
- (3) linear
- (4) inverted bell shaped
57. Lipofuscin granules are found in:
- (1) Nerve cell                      (2) Cardiac muscle
- (3) red muscle                      (4) cartilage
58. Regeneration of liver is:
- (1) Metamorphosis
- (2) Reparative regeneration
- (3) Epimorphosis
- (4) Morphogenesis
59. The theory of ageing holds that ageing is due to:
- (1) Random mutation in DNA of somatic cells
- (2) Increased cross-linkage of collagen & other proteins
- (3) Cumulative result of damage to tissues by free radicals
- (4) All these
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## ASSERTION & REASON QUESTIONS

### Directions for Assertion & Reason questions

These questions consist of two statements each, printed as Assertion and Reason. While answering these question you are required to choose any one of the following four response.

- A. If both assertion & Reason are True & the Reason is a correct explanation of the Assertion.
- B. If both Assertion & reason are True but reason is not a correct explanation of the Assertion.
- C. If Assertion is True but the Reason is False.
- D. If both Assertion & Reason are false.

60. **Assertion :** Death is essential in the life cycle of the organism.

**Reason:** It helps to recycle the materials in the environment.

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

61. **Assertion :** Death is regarded as the most regulatory process on earth.

**Reason :** It avoids over- crowding caused by continuous reproduction

- (1) A    (2) B    (3) C    (4) D

62. **Assertion :** Senescence is the time when age associated defects are manifested.

**Reason :** Certain genes may be undergoing sequential switching on and off during one's life.

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

## ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1
A.	4	3	1	4	3	2	1	3	1	4	2	1	3	2	4	4	1	3
Q.	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3
A.	2	3	3	2	4	4	1	4	2	4	3	3	2	3	1	2	4	4
Q.	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5
A.	4	4	1	3	2	4	2	1	2	2	4	1	1	4	3	1	4	1
Q.	5	5	5	5	5	6	6	6										
A.	5	6	7	8	9	0	1	2										
Q.	1	1	1	2	4	1	1	1										
A.																		