BIOLOGY

BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)

GROWTH, REGENERATION AND AGEING

Check Point 5 1

1. Which of the following is the term used for increase in call size due to synthesis of protoplasmic structure?

A. Hyperplasia

B. Hypertrophy

C. Intussusception

D. None of these

Answer: B

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2. Hyperplasia is increase in

A. cell number

B. cell protoplasm

C. cell growth

D. apoplasmatic structures

Answer: A

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3. Neurons grow by

A. multiplication

B. increase in volume

C. extension of axons and dendrites

D. Both (a) and (b)

Answer: C

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4. Isometric growth in not found in

A. mammals

B. fishes

C. locust

D. grasshopper

Answer: A

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5. The kind of growth in which undifferentiated reserve cells get differentiated is

A. accretionary growth

B. auxetic growth

C. multiplicative growth

D. Both (a) and (b)

Answer: A

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6. Which of the following correctly signifies the phases found in a sigmoid curve?

A. Lag phase, plateau, acceleration

B. Plateau, acceleration, lag phase

C. Log phase, plateau, exponential phase

D. Lag phase, acceleration, plateau

Answer: D

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7. Negative growth in plants can be observed during

A. germination of seeds

B. formation of leaves

C. embryo formation

D. Both (a) and (b)

Answer: A

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8. Which of the following factor triggers the division of activated T-lymphocytes?

A. Epidermal grwoth factor

B. Erythropoietin

C. Interleukin-2

D. Both (a) and (b)

Answer: C

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9. In human beings, growth stops completely at the age of

A. 22-23 yrs

B. 10-15 yrs

C. 30-32 yrs

D. 9-12 yrs

Answer: A

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10. During puberty, the rate of growth increases due to

A. thyroxine hormone

B. adrenaline

C. insulin

D. None of these

Answer: A

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Check Point 5 2

1. The cells of liver and kidney divide, but do not form undifferentiated tissue. Such type of regeneration is best known as

A. compensatory hypertrophy

B. morphollaxis

C. epimorphosis

D. compensatory regeneration

Answer: D

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2. Regeneration of Hydra will be faster it it is cut of from

A. head

B. middle body

C. tentacles

D. Both (a) and (c)

Answer: C

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3. Autotomy is most commonly seen in

A. lizards

B. mammals

C. nematode

D. birds

Answer: A

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4. Programmed cell death occurs in

A. apoptosis

B. necrosis

C. self-amputation

D. regeneration

Answer: A

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5. Which of the following is a morphological change occurring during ageing?

A. Brittle bone

B. Stooping body

C. Wrinkled skin

D. Both (b) and (c)

Answer: D

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6. Fall in estrogen during ageing may cause

A. thinning of bones

B. frailty

C. disability

D. All of these

Answer: D

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7. According to programmed senescence theory, which gene prevents ageing?

A. bcl-2

B. bkl-1

C. bax-1

D. bax-2

Answer: A

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8. Free radicals are involved in causing

A. neurodegradation

B. AIDS

C. cold

D. decreased immunity

Answer: A

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9. Degradation of which of the following enzymes is involved in ageing?

A. Telomerase

B. Xymase

C. Lipases

D. Oxidoreductase

Answer: A

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10. Death mainly occurs due to the failure of

A. heart

B. lungs

C. nervous system

D. All of these

Answer: D

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Chapter Exercises Taking It Together

1. Which of the following is an important property of life?

A. Photosynthesis

B. Growth

C. Regeneration

D. None of these

Answer: B

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2. Early embryonic developmental stages constitute

A. functional state

B. prefunctional state

C. transitional growth

D. fundamental growth

Answer: C

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3. Multiplicative growth is found in

A. old age

B. adulthood

C. embryo

D. childhood

Answer: C

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4. Postembryonic growth is

A. accretionary

B. auxetic

C. multiplicative

D. All of these

Answer: D

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5. Accretionary growth is due to

A. reserve cells

B. meristematic cells

C. embryonic cells

D. differentiated cells

Answer: A

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6. In animals , growth rate is

A. uniform

B. linear

C. differential

D. slow

Answer: C

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

A. Muscles

B. Skeleton

C. Fat

D. Brain

Answer: D

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8. In human beings, which part shows the maximum increase in weight from birth to adulthood?

A. Brain

B. Fat

C. Muscles

D. Skeleton

Answer: C

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9. Adult females tend to have less weight than adult males due to lesser development of

A. muscles

B. Skeleton

C. Both (a) and (b)

D. fat

Answer: C

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10. In which of the following animal group, neoblasts cells are present?

A. Protozoans

B. Poriferans

C. Coelenterates

D. Planarians

Answer: D

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11. The usual shape of growth curve is

A. sigmoidal

B. inverted bell-shaped

C. linear

D. zig-zag

Answer: A

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12. The maximum growth occurs in

A. lag phase

B. exponential phase

C. stationary phase

D. All of these

Answer: B

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13. Who proposed 'wear and tear theory' of ageing?

A. August Weismann

B. TH Morgan

C. Johan Bjorksten

D. Trembley

Answer: A

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14. Maximum growth in human foetus occurs at the age of

A. 8 months

B. 6 months

C. 4 months

D. 2 months

Answer: C

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15. Growth in the first 10-13 years of age is controlled by

A. STH

B. ACTH

C. thyroxine

D. thymosin

Answer: C

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16. Growth at the end of the childhood and during puberty is controlled by

A. GH and thymosin

B. thyromine and thymosin

C. thyroxine and GH

D. thymosin only

Answer: C

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17. Gerontology is the branch of science that deals with

A. sexual reproduction

B. ageing

C. embryo development

D. regeneration

Answer: B

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18. During ageing, collagen present in intercellular spaces becomes

A. destroyed

B. impermeable and rigid

C. more elastic

D. All of these

Answer: B

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19. Broken arms are regenerated in

A. molluscs

B. echinoderms

C. fishes

D. human beings

Answer: B

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20. Morphallaxis is reported in

A. porifers

B. coelenterates and flatworms

C. nemarteans and some ascidians

D. All of the above

Answer: D

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21. Which of the following is recognised as the mythological monster 'lerna'?

A. Planaria

B. Acetabularia

C. Hydra

D. Stentor

Answer: C

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22. Ageing pigment is

A. melatonin

B. lipofuschin

C. lutein

D. zeaxanthine

Answer: B

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23. Growth due to mitotic multiplication of reserve cells occurring in specific location of the body is

A. auxetic growth

B. multiplication growth

C. accretionary growth

D. All of these

Answer: C

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24. Healing of cuts and wounds is

A. regeneration

B. degrowth

C. dedifferentiation

D. growth

Answer: A

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25. Repair is affected by cell

A. proliferation

B. migration

C. Both (a) and (b)

D. None of these

Answer: C

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26. Regeneration was first discovered in

A. Hydra

B. Planaria

C. Sycon

D. All of these

Answer: A

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27. The mechanism of regeneration in Hydra was discovered by

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28. Which of the following cells posses good regeneration power in mammals?

A. Liver

B. Brain

C. Kidney

D. Lung

Answer: A

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29. The whole body can be regenerated in

A. lizard

B. tadpole

C. spider

D. Planaria

Answer: D

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30. The voluntary casting off a part of the body when an animal is attacked is known as

A. autotomy

B. autogamy

C. amputation

D. regeneration

Answer: A

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31. Accumulation of cells and formation of a bud at the site of amputation is

A. morphallaxis

B. epimorphosis

C. repair

D. compensatory regeneration

Answer: B

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32. Autotomy is recoreded in

A. legs in carbs

B. tail of lizards

C. viscera in holothurian echinoderms

D. All of the above

Answer: D

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33. Crustaceans, insects and spiders are able to regenerate their

A. legs

B. abdomen

C. head

D. thorax

Answer: A

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34. Birds are able to regenerate their

A. head

B. tail

C. beak

D. legs

Answer: C

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35. Salamander is capable to regenerate its

A. limbs

B. tail

C. external gills

D. All of these

Answer: D

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36. The ability of animals to regenerate lost parts was first reported by

A. Patten

B. Storer

C. Trembley

D. Carison

Answer: C

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37. Regeneration is possible for

A. beak in birds

B. tail in lizards

C. fins in fishes

D. All of these

Answer: D

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38. Which of the following is an immortal being not subjected to ageing?

A. Periplaneta

B. Starfish

C. Hydra

D. All of these

Answer: C

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39. Advanced glycosylation end products

A. loosen the tissues

B. damage the tissues

C. toughens the tissues

D. do not affect the tissues

Answer: C

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40. Isometric growth in found in

A. fish

B. locust

C. grasshopper

D. All of these

Answer: D

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41. The bones of old persons becomes brittle due to the accumulation of

A. calcium

B. magnesium

C. sodium

D. phosphorus

Answer: A

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42. Human body regularly loses cells in the region of

A. skin surface

B. lining layer of gut

C. red blood cells

D. All of these

Answer: D

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43. Regeneration is possible in tadpoles for amutated

A. jaws and eyes

B. intestine

C. tail and limbs

D. None of these

Answer: C

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44. Regeneration of a limbs or tail is an example of

A. compensatory hypertrophy

B. epimorphosis

C. morphallaxis

D. autotomy

Answer: B

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45. With the increase in age, which of the following organ in mice, dog and man exhibits increase in chromosomal aberrations?

A. Liver

B. Brain

C. Kidney

D. Gonads

Answer: A

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46. Which of the following present in intercellular spaces become less permeable, rigid and insoluble during ageing?

A. Keratin

B. Elastin

C. Collagen

D. Globulin

Answer: C

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47. Which of the following theory falls under the category of programmed theories of ageing?

A. Gross linking theory

B. Living theory

C. Free radical theory

D. Endocrine theory

Answer: D

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48. Morphallaxis is

A. reconstruction of the whole body

B. growth of lost limb

C. healing of injury

D. regeneration with the help of blastema

Answer: A

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49. Growth occurs when

A. anabolism is higher than catabolism

B. catabolism is higher than anabolism

C. both anabolism and catabolism are equal

D. None of the above

Answer: A

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50. Growth curve indicates

A. percentage increase in muscle mass

B. a growth parameter at various intervals

C. absolute growth

D. None of the above

Answer: B

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51. The nearest approach to pure exponential growth is found in

A. rod-shaped bacteria

B. multicellular organisms

C. larvae of insects in which complete metamorphosis takes place

D. All of the above

Answer: C

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52. Ageing is characterised by

A. decline in metabolic activity

B. increased metabolic activity

C. increased anabolism

D. decrease number of free radicals

Answer: A

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53. Which of the following is found in animals with higher and complex organisation?

A. Restorative regeneration

B. Reparative regeneration

C. Both (a) and (b)

D. None of the above

Answer: B

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54. Which of the following growth factor promotes the proliferation of many connective tissues?

A. Interleukin-2

B. Insulin-like growth factors

C. Epidermal growth factors

D. Platelet-derived growth factors

Answer: D

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55. Select the correct statement.

A. Average lifespan of man is longer than that of woman

B. Average lifespan of woman is longer than that of man

C. Average lifespan in both sexes is same

D. None of the above

Answer: B

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56. Possible cause of brittle bones with ageing may be

A. decrease amount of DHEA in body

B. excess of calcium in body

C. increased amount of oestrogen in body

D. None of these

Answer: B

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57. Restorative regeneration decrease with

A. increase in complexity of organisation

B. decrease in organisational complexity

C. development of hormones

D. development of nerves

Answer: A

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58. If one kidney of a man is lost, the other kidney enlarges to take over the function of the missing kidney and is called

A. restorative regeneration

B. Reparative regeneration

C. autotomy

D. compensatory regeneration

Answer: D

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Chapter Exercises Medical Entrances Special Format Questions

1. Which of the following statements correctly defines growth?

I. Increase in size of cells.

II. Increase in the number of cells.

III. Increase in the amount of apoplasmatic structures.

IV. Decrease in amount of living material.

A. Only I

B. I and II

C. I, II and III

D. All of these

Answer: C

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2. Read the following statement.

I. In auxetic growth, the volume of body is increased.

II. Auxetic growth occurs without any division and increase in the number of cells.

III. Accretionary growth in post-embryonic period of organism's life is due to increase in number of cells.

IV. The prenatal growth of higher vertebrates is an example of accretionary growth.

Choose the correct option.

A. I and II

B. III and IV

C. Only III

D. I, II and IV

Answer: A

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3. Consider the following match pairs.

I. Coelenterates	–	Lost part regenerated with exact polarity
II. Moluscs	–	Sealing of wounds by neoblast cells
III. Nematodes	–	Only closure of superficial
IV. Arthropods	–	Regenerate parts of disc

Choose the incorrectly option.

A. Only I

B. Only II

C. II and IV

D. I and III

Answer: C

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4. Read the given statements regarding changes occurring in organisms during ageing.

I. Heart rate decreases slightly ageing.

II. The brain loses some cells (neurons) and others become damaged.

III. Enzyme aldolase becomes more effective.

IV. Collagen becomes less permeable, rigid and insoluble.

Which of the following changes occur in human beings?

A. Only I

B. I and IV

C. II and IV

D. I and III

Answer: D

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5. Match the following Columns.

Column I	Column II
A. Morphallaxis	1. Deterioration in the structure and function of the body cells tissues and organs of an animal.
B. Epimorphosis	2. Replacement or reconstruction of lost parts.
C. Autotomy	3. Proliferation of the new tissue cells from the surface of wound.
D. Regeneration	4. Reconstruction of the whole body from a small fragment.
E. Senescence	5. Voluntary casting off a part of the body when an animal is attached.

Codes

	A	B	C	D	E
A.	3	5	4	1	2
B.	1	2	4	5	3
C.	4	2	5	3	1
D.	1	3	4	5	2

Answer: C

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6. Match the following Columns.

Column I	Column II
A. Earthworms	1. Limbs, tails, external gills, jaws, intestine
B. Mollusca	2. Few body segments
C. Salamander and axolotl	2. Few body segments
D. Mammals	4. Part of eye, eye-stalk, head, foot, etc.

A.

A	B	C	D
2	4	3	1

B.

A	B	C	D
1	2	4	3

C.

A	B	C	D
2	4	1	3

D.

A	B	C	D
4	3	2	1

Answer: C

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7. Assertion Growth involves the synthesis of protoplasmic materials.

Reason During growth, catabolic activities are faster than anabolic activities.

A. Both Assertion and Reason are true and Reason is the corrrect explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion

C. Assertion is true, but Reason is false

D. Assertion is false, but Reason is true

Answer: C

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8. Assertion Coelenterates and flatworms show morphallatic regeneration. ltbr. Reason In both of these, a body fragment can develop into complete organism.

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9. Assertion Growth curve of higher animals is sigmoid.

Reason Absolute growth is the difference between initial and final weight/size of an organism.

A. A

B. B

C. C

D.

Answer: B

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10. Assertion Growth of different body parts is differential.

Reason During human growth, muscles show minimum growth, while brain shows maximum growth.

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11. Assertion In ageing, power of intake of useful materials and expelling of harmful materials out of the cells both decrease.

Reason With age, collagen protein of connective tissue becomes less flexible, less permeable and insoluble.

A. If both assertion and reason are true and the reason is a correct explanation for assertion

B. If both assertion and reason are true and the reason is the incorrect explanation for assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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12. Assertion Death is an essential and inescapable biological phenomenon.

Reason Death maintains ecological homeostasis and justifies the need of reproduction.

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13. Assertion A regenerated tail of wall lizard shows heteromorphosis.

Reason Newly formed tail is different from original tail in being without vertebrae.

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14. Assertion Brain of man shows compensatory hypertrophy.

Reason It grows larger than its normal size when a part is lost.

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15. Assertion Regeneration blastema is a bud-like structure formed during regeneration of limb in salamander.

Reason Formation of regeneration blastema involves dedifferentiation.

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16. Assertion Old age is not an illness. It is a continuation of life with decrease capacity for adaptation.

Reason Cessation of mitosis is normal genetically programmed event.

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Chapter Exercises Medical Entrances Gallery

1. Which is the correct example of the type of regeneration out of two major types ?

A. Morphallaxis- Regeneration of two transversely cut equal pieces of one Hydra into two small Hydra

B. Epimorphosis-Replacement of old and dead erythrocytes by the new ones

C. Morphallaxis-Healing of wound in the skin

D. Epimorphosis-Regeneration of crushed and filtered out pieces of Planaria into as many new planarian

Answer: A

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2. Lowest regeneration power is found in

A. Amoeba

B. Sponges

C. coelenterates

D. brain cells

Answer: D

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3. Select the correct option Assertion Q. due to fragmentation in Planaria, each part develops the remaining body parts and becomes a complete animal Reason R. Differentiated tissue present in each broken part of Planaria undergoes dediferentiation and then differentiation in regeneration.

A. Both Assertion and Reason are true and Reason is the corrrect explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion

C. Assertion is true, but Reason is false

D. Both Assertion and Reason are false

Answer: A

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4. Ageing of leaves is called

A. senescence

B. necrosis

C. photoperiodism

D. vernalisation

Answer: A

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5. Auxetic growth is characterised by

A. increase in cell volume only

B. increase in cell number only

C. increase in fatty tissue

D. increase in intercellular material

Answer: A

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6. Which one of the following is known for its regeneration pwer?

A. Hydra

B. Obelia

C. Physalia

D. Aurelia

Answer: A

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7. Accumulation of .....in the skin causes premature ageing of the skin in women.

A. phosphorus

B. collagen

C. calcium

D. magnesium

Answer: B

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8. Which one is not a case of epimorphosis ?

A. Formation of sperms from small clumps of cells

B. Regeneration of tail in a lizard

C. Replacement of severed aim in starfish

D. Replacement of limb in salamander

Answer: A

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9. Regeneration of liver is

A. metamorphosis

B. reparative regeneration

C. epimorphosis

D. morphogenesis

Answer: B

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10. Regeneration of Hydra would be faster if it is cut off from

A. tentacles

B. hypostome

C. base

D. All of these

Answer: A

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11. With increasing age, secretion of which of the following is reduced to half

A. GTH

B. Melatonin

C. HGH

D. Oestrogen

Answer: C

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