

# JAMB

## Biology

### Past questions

*Paper Type:* **Objective (PT. 6-10)**

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## JAMB BIOLOGY PAST QUESTIONS (PT.6)

1. Which of the following structures is a protective adaptive feature of the Agama Lizard to the environment?

- A. Nuchal crest
- B. Claws
- C. Scaly skin
- D. Gular fold

2. Which of the following adapts an insect for feeding?

- A. suitable mouthparts
- B. paired antennae
- C. segmented body
- D. jointed appendages

3. Which of the following results from the cross between Yy and Yy?

- A. 2Yy-2yy
- B. 2Yy:yy:YY
- C. YY:2Yy:yy
- D. YY: Yy:2yy

4. Which of the following is NOT part of the carbon cycle?

- A. Organic carbon
- B. Decomposition
- C. Nitrates formation
- D. Photosynthesis

5.

*I. Tissues*

*II. System*

*III. Cell*

*IV. Organs*

Which of the above is the level of organization of a leaf?

- A. IV
- B. I
- C. III
- D. II

6. In cellular respiration, energy is stored in the form of \_\_\_\_\_

- A. heat energy
- B. adenosine diphosphate
- C. adenosine monophosphate
- D. adenosine triphosphate

7. The principal organ for the manufacture of food in autotrophy is the \_\_\_\_\_

- A. root hair
- B. growing root
- C. mature fruit
- D. green leaf

8. A disease that results from lack of iodine in the diet of humans is \_\_\_\_\_

- A. beriberi
- B. scurvy
- C. rickets
- D. goitre

9. The process whereby some organism with certain favourable features get established in an area is \_\_\_\_\_

- A. gene mutation
- B. dispersal
- C. overcrowding
- D. natural selection

10. The rise and fall of ocean water during the day is referred to as \_\_\_\_\_

- A. gravity
- B. a pull
- C. tide
- D. zone

11. Which of the following is a producer in an aquatic habitat?

- A. Nymphaea
- B. Dryopteris
- C. planarian
- D. Similium

12. The relationship that exist between a shark and Remora is \_\_\_\_\_

- A. parasitism
- B. commensalism
- C. saprophytism
- D. symbiosis

13.

*I. Tissue*

*II. System*

III. Cell

IV Organ

The correct sequence of increasing level of complexity is \_\_\_\_\_

- A. IV-II-III
- B. I-II-III-IV
- C. IV-III-I-II
- D. III-I-IV-II

14. Which of the following is not an inheritable disease?

- A. Poliomyelitis
- B. Sickle-cell anaemia
- C. Mental illness
- D. Haemophilia

15. Which of the finger print types occur most frequently in the population of human beings?

- A. Double-loop
- B. Whorl
- C. Arch
- D. Loop

16. Beriberi results from a deficiency of \_\_\_\_\_

- A. vitamin A
- B. vitamin E.
- C. vitamin B
- D. vitamin C

17. Bacteria which add atmospheric nitrogen to the soil are \_\_\_\_\_

- A. putrefying bacteria
- B. nitrifying bacteria
- C. nitrogen fixing bacteria
- D. denitrifying bacteria

18. The spines of the hedgehog is an adaptive features for \_\_\_\_\_

- A. Courtship
- B. defence
- C. water conservation
- D. obtaining food

19. The dental formula of carnivores is represented by \_\_\_\_\_

- A.  $I \frac{0}{3}, C \frac{1}{1}, pm \frac{4}{4}, m \frac{2}{3}$

B. I  $0/2$ , C  $1/1$ , pm  $4/4$ , m  $2/4$

C. I  $2/3$ , C  $2/1$ , pm  $3/4$ , m  $2/3$

D. I  $3/3$ , C  $1/1$ , pm  $4/4$ , m  $2/2$

20. Which of the following instruments is used to measure temperature?

- A. Thermometer
- B. Hygrometer
- C. Anemometer
- D. Hydrometer

21. In human, puffiness and water retention in the body is a possible symptom of \_\_\_\_\_

- A. bladder malfunction
- B. poor digestion
- C. kidney malfunction
- D. obesity

22. The theory of evolution which postulates that all living organisms have a common ancestor was proposed by \_\_\_\_\_

- A. Linnaeus
- B. Darwin

C. Lamarck

D. Mendel

23. Mammals requires roughage in their food to \_\_\_\_\_

- A. provide energy
- B. slow down aging
- C. ease digestion
- D. prevent disease

24. Variation can occur among offspring of living organism because \_\_\_\_\_

- A. seeds are produced by self-pollination
- B. zygotes are produced by cross fertilisation
- C. they are produced by binary fission
- D. they are produced without fertilisation

25. The most important biotic factors which affect plants and animals in the habitat are \_\_\_\_\_

- A. temperature and rainfall

- B. temperature and turbidity
- C. salinity and relative humidity
- D. rainfall and relative humidity

26. The lowest unit of classification is the \_\_\_\_\_

- A. Kingdom
- B. class
- C. phylum
- D. species

27. Two important process involved in the absorption and transport of materials in plants are \_\_\_\_\_

- A. flaccidity and turgidity
- B. diffusion and plasmolysis
- C. plasmolysis and capillarity
- D. osmosis and diffusion

28. A series of organism existing in an ecosystem through which energy is transformed can be referred to as \_\_\_\_\_

- A. food cycle
- B. food chain

- C. pyramid on numbers
- D. food web

29. The cell organelle solely responsible for respiration is the \_\_\_\_\_

- A. nucleus
- B. nucleolus
- C. endoplasmic reticulum
- D. mitochondrion

30. In which part of Nigeria are Mangrove swamps found?

- A. Chad Basin
- B. Niger Delta
- C. Benue Valley
- D. Mambilla Plateau

31. The breeding methods that are useful in selective breeding of animals and plants are \_\_\_\_\_

- A. inbreeding and cross- breeding
- B. inbreeding and hetero-breeding
- C. inbreeding and out-breeding
- D. inbreeding and self-breeding

32. In a small unicellular organism, diffusion is sufficient for transport because \_\_\_\_\_

- A. the surface area to volume ratio is small
- B. they have lungs for diffusion
- C. materials have to move over long distance
- D. the surface area to volume ratio is large

33. The function of the spinal cord is to \_\_\_\_\_

- A. stand the body structure erect
- B. control involuntary actions
- C. transmit impulses to the brain
- D. regulates developmental changes

34. The first vertebrates to venture out of water and live on land are the \_\_\_\_\_

- A. Pisces
- B. Amphibians
- C. Reptiles
- D. Aves

35. Which of the following factors mostly determine the major biomes of the world?

- A. pressure and wind speed
- B. temperature and wind speed
- C. pressure and rainfall
- D. Temperature and rainfall

36.

*I. Strong winds*

*II. High temperature*

*III. Dry and porous soils*

Which group of plants are specially adapted to grow under environmental conditions stated above?

- A. Thallophytic
- B. Mesophytes
- C. Xerophytes
- D. Hydrophytes

37. The lowest unit of a biogeographical plant species is \_\_\_\_\_

- A. micro flora

- B. macro fauna
- C. micro fauna
- D. macro flora

38. Which of the following is rich source of vitamin K?

- A. Tomato
- B. Guava
- C. Milk
- D. Onion

39. Severe diarrhea, dehydration and weakness are symptoms of \_\_\_\_\_

- A. cholera
- B. chickenpox
- C. malaria
- D. yellow fever

40. A common characteristic found among the crustaceans is the possession of \_\_\_\_\_

- A. a pair of antennae
- B. a pair of walking legs on each segment

C. four pairs of walking legs on the cephalothorax

D. two pairs of antennae

41. In which of the following groups of invertebrates are flagella and cilia found?

- A. Annelids
- B. Protists
- C. Coelenterates
- D. Arthropods

42. Physiological variation in human population is evidence in the \_\_\_\_\_

- A. difference in the fingerprints
- B. physical appearance of individuals
- C. differences in height and weight
- D. ability to roll the tongue

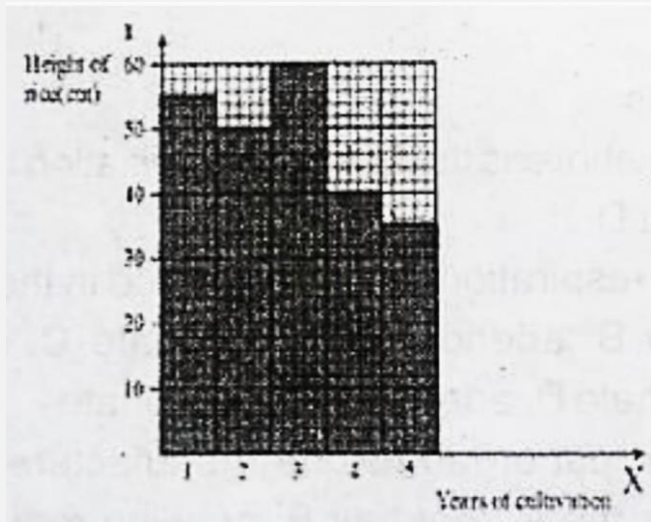
43. In photosynthesis, oxygen is liberated during \_\_\_\_\_

- A. conversion of energy
- B. photolysis
- C. splitting of carbon (IV) oxide



D. glycolysis

**Use the information below to answer the question 44 and 45 that follows**



44. What is the total height of rice that grew within the years of cultivation?

- A. 240 cm
- B. 239 cm
- C. 340 cm
- D. 339 cm

45. What is the average of the heights of rice within the period of cultivation?

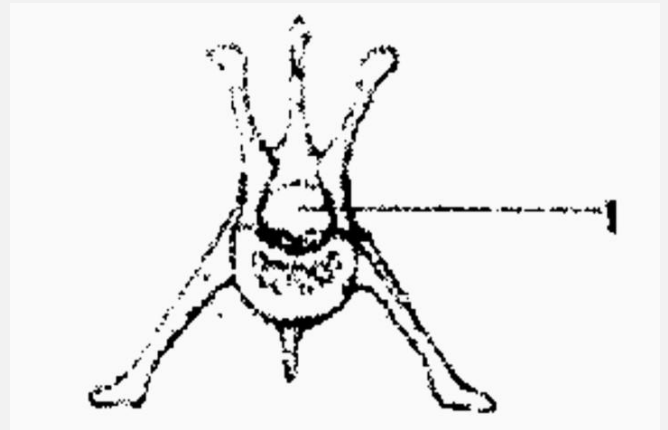
- A. 68cm

B. 47.8cm

C. 48cm

D. 67.8cm

46. Use the diagram below to answer the question that follows



The type vertebra represented in the diagram is \_\_\_\_\_

- A. Atlas
- B. Lumbar
- C. Axis
- D. Sacrum

47. The structure labeled I is \_\_\_\_\_

- A. Centrum
- B. neural canal
- C. neural spines
- D. transverse process

## JAMB BIOLOGY PAST QUESTIONS (PT.7)

1. The piercing and sucking mouth parts are found in \_\_\_\_\_

- A. grasshoppers
- B. mosquitoes
- C. termites
- D. cockroaches

2. The hormones that regulate plant growth are \_\_\_\_\_

- A. ethylene and auxins
- B. auxin and gibberellins
- C. cytokinin and abscisic acid
- D. ethylene and gibberellins

3. Which of the following pair of organisms exhibit parasitic association?

- A. insect and plant
- B. cattle and egret
- C. shark and remora
- D. tsetse-fly and cattle

4. Which of the following group of animals can withstand the rigour of the arid land?

- A. locust, camel, lizard and snakes
- B. monkeys, chameleon, earthworm and grasshopper
- C. monkeys, grasshopper, snail and snakes
- D. lungfish, duck, butterfly and lizards

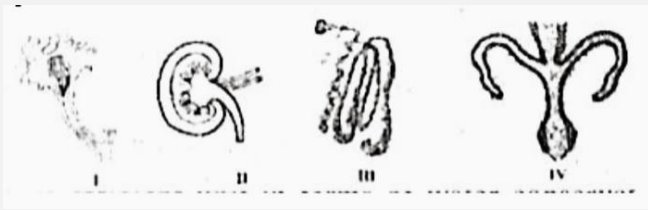
5. Suture joint is found in the \_\_\_\_\_

- A. hip
- B. ankle
- C. skull
- D. elbow

6. The organelle responsible for osmoregulation in Paramecium is \_\_\_\_\_

- A. flame cell
- B. nephridia
- C. contractile vacuole
- D. Malpighian tubule

7. **Use the diagram to answer the question that follow**



The excretory organ of an earthworm is represented by \_\_\_\_\_

- A. IV
- B. I
- C. III
- D. II

8. The platelets in mammalian blood are responsible for \_\_\_\_\_

- A. transporting oxygen
- B. initiating clotting
- C. removing carbon (IV) oxide
- D. destroying micro-organisms

9. The most important factor that determines the different types of vegetation is \_\_\_\_\_

- A. light
- B. wind
- C. temperature
- D. rainfall

10. When testing for the presence of starch in a leaf, the reason for dipping the decolourised leaf in hot water is to \_\_\_\_\_

- A. detect the starch
- B. kill the leaf
- C. soften the leaf
- D. remove the chlorophyll

11. The relationship between remora and shark can best be described as \_\_\_\_\_

- A. parasitism
- B. amensalism
- C. mutualism
- D. commensalism

12. The major characteristic of a fresh water habitat is the possession of \_\_\_\_\_

- A. high turbidity
- B. high density
- C. low salinity
- D. high current

13. The causative organism of cholera is \_\_\_\_\_

- A. Clostridium sp
- B. shigella sp
- C. vibrio sp
- D. salmonella typhi

14. The process that takes place in the dark stage of photosynthesis is \_\_\_\_\_

- A. oxidation of water
- B. photolysis of water
- C. oxidation of carbon (IV) oxide
- D. reduction of carbon (IV) oxide

15. Chlorofluorocarbons are air pollutants that originates from \_\_\_\_\_

- A. crude oil refining
- B. coal mining
- C. motor vehicle exhaust
- D. cooling system

16. Which of the following is organ level of organisation?

- A. Volvox sp
- B. paramecium caudatum
- C. hydra viridis
- D. onion bulb

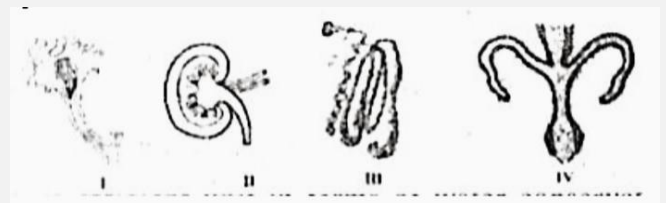
17. The simplest form of reproduction is \_\_\_\_\_

- A. conjugation
- B. budding
- C. spore formation
- D. binary fission

18. Which of the following is a characteristic of wind-pollinated flower?

- A. flowers lack nectar
- B. flowers are conspicuous
- C. flowers have perianths
- D. flowers are bisexual

19. **Use the diagram to answer the question that follow**



The most eminent unit in terms of water conservation is represented by \_\_\_\_\_

- A. IV
- B. I
- C. III
- D. II

20. The process required for formation of gamete in sexual reproduction is \_\_\_\_\_

- A. implantation
- B. fertilisation
- C. mitosis
- D. meiosis

21. In an experiment to determine the humus in a soil sample the following results were obtained:

*Mass of dish - 20g*

*Mass of dry soil - 7.5g*

*Mass of dish + soil after burning = 25g*

The percentage of humus in the given sample is \_\_\_\_\_

- A. 9.1
- B. 37.5
- C. 12.5
- D. 33.3

22. The presence of termites and earthworms in soil promote \_\_\_\_\_

- A. porosity and fertility
- B. porosity and aeration
- C. aeration and fertility
- D. acidity and aeration

23. In a 15m<sup>2</sup> habitat, the total number of Tridax counted using a 1.6m<sup>2</sup> quadrant thrown randomly 50 times was 400. What is the Tridax?

- A. 12
- B. 16
- C. 8
- D. 5

24. Which of the following is a sex-link character?

- A. Dwarfism
- B. Albinism

- C. Tongue rolling
- D. Colour blindness

25. The outer-most tissue of the herbaceous roots is the \_\_\_\_\_

- A. cuticle
- B. pericycle
- C. epidermis
- D. endodermis

26. The respective tissues that transport water and manufactured food in plants are \_\_\_\_\_

- A. xylem and phloem
- B. phloem and tracheid
- C. phloem and xylem
- D. xylem and tracheid

27. An adaptive feature of plants in the savanna is \_\_\_\_\_

- A. fissured bark
- B. few grasses
- C. tall trees
- D. long lifespan

28. A grasshopper's cuticle becomes green during the season and black after fire. The reasons for the change is \_\_\_\_\_

- A. obtain food
- B. predators
- C. secure mates
- D. escape detection

29. Which of the following is the most advance plant?

- A. merchantia
- B. Dryopteris
- C. Chlamydomonas
- D. Spirogyra

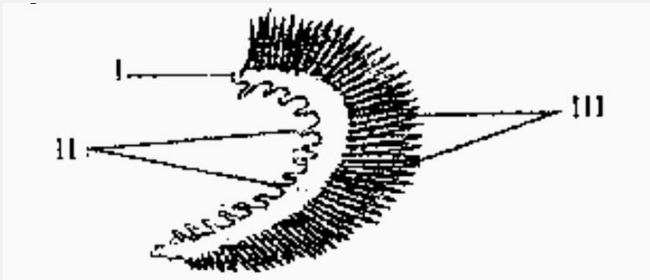
30. The soil type with the least ability to retain nutrients is \_\_\_\_\_

- A. sandy loam
- B. clay loam
- C. loam
- D. sand

31. A humming bird is able to feed on nectar because its beak is \_\_\_\_\_

- A. short, slender and ridged
- B. short, strong and conical
- C. long, slender and slightly curved
- D. long, wide and slightly curved

**Use the diagram to answer the question that follow**



32. The part labelled III acts as \_\_\_\_\_

- A. water outlet
- B. food strainer
- C. exchange surface
- D. blood transporter

33. The effect of overcrowding is \_\_\_\_\_

- A. immigration
- B. reduced competition
- C. emigration
- D. reduced mortality

34. The vertebrae that allows the skull to nod and rotate are \_\_\_\_\_

- A. axis and cervical
- B. atlas and thoracic
- C. axis and atlas
- D. atlas and cervical

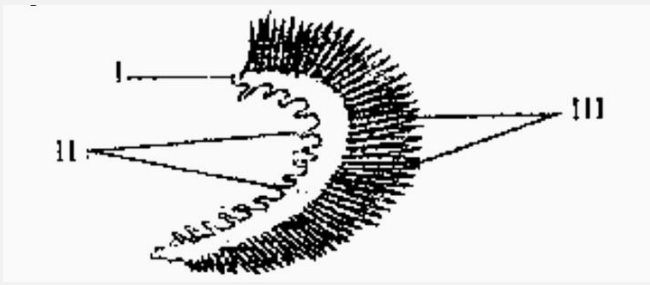
35. The component of the cell that determines paternity resides in the \_\_\_\_\_

- A. centrosome
- B. ribosome
- C. nucleus
- D. mitochondria

36. Which of the following beak type is an adaption for aquatic feeding?



**37. Use the diagram to answer the question that follow**



The part labelled II is the \_\_\_\_\_

- A. arch
- B. filament
- C. slit
- D. raker

38. The insect-trapping by the leaves of Venus flytrap is an example of a \_\_\_\_\_

- A. adaptive coloration
- B. structural adaptation
- C. environmental adaptation
- D. behaviour adaptation

39. Morphological variation in humans include \_\_\_\_\_

- A. height, skin, colour and tongue rolling
- B. weight, finger prints and body shape
- C. height, weight and blood group

D. skin colour, blood and height

40. Which of the following is correct about blood transfusion?

- A. Group AB can only receive from groups A and B and not from group O
- B. Group O can receive from groups A and B and from AB
- C. Group B can only donate to blood group B and not to AB and O
- D. Group O can donate to groups A, B and AB but cannot receive

## CHECK YOUR ANSWERS

*Would you like to get or confirm the **correct answer(s) with explanations** to any or all of these questions?*

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## JAMB BIOLOGY PAST QUESTIONS (PT.8)

1. A group of closely related organisms capable of interbreeding to produce fertile offspring are known as members of a \_\_\_\_\_

- A. kingdom
- B. class
- C. family
- D. species

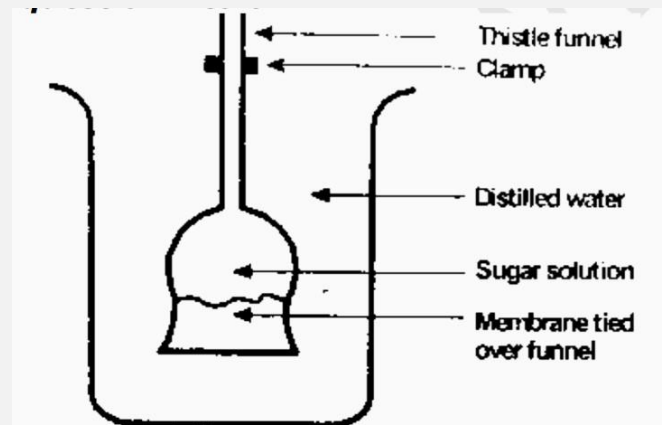
2. A beaker of pond water containing few specimens of Euglena was placed in a dark room for two weeks. At the end of this period, the specimens of Euglena were still alive because they were \_\_\_\_\_

- A. able to carry out holozoic nutrition
- B. able to carry out photosynthesis using carbon dioxide in the pond water
- C. better adapted to life in darkness than to life in light
- D. not overcrowded

3. The cytoplasm of the cell is considered a very important component because it \_\_\_\_\_

- A. regulates the amount of energy in the cell
- B. suspends all cell organelles
- C. is the outermost part of the cell
- D. is solely responsible for cell division

**Use the diagram below to answer question 4 to 6**



4. After an hour, the level of water in the thistle funnel will \_\_\_\_\_

- A. rise
- B. fall
- C. remain the same
- D. double

5. The experiment is used to demonstrate the process of \_\_\_\_\_

- A. transportation
- B. water culture
- C. diffusion
- D. Osmosis

6. In a plant cells, the role of the membrane is played by the \_\_\_\_\_

- A. nucleolus
- B. cell wall
- C. cytoplasm
- D. mitochondrion

7. Red blood cells were found to have burst open after being placed in distil for an hour. This phenomenon is known as \_\_\_\_\_

- A. plasmolysis
- B. diffusion
- C. haemolysis
- D. wilting

8. The curvature movement of plants in response to the stimulus of water is called \_\_\_\_\_

- A. hydrotropism
- B. geotropism
- C. Phototropism
- D. thigmotropism

9. The overall reaction in glycolysis can be summarised as \_\_\_\_\_

- A.  $C_6H_{12}O_5 \rightarrow C_3H_4O_3 + 4H + ATP$
- B.  $C_6H_{12}O_6 \rightarrow 2CH_4O_3 + 4H + 2ATP$
- C.  $C_6H_{12}O_6 \rightarrow 2CH_4O_3 + 4H + ADP$
- D.  $C_6H_{12}O_6 \rightarrow 2C_3H_4O_3 + 4H + 2ADP$

10. The longest bone in the body is the \_\_\_\_\_

- A. humerus
- B. femur
- C. scapula
- D. tibia

11. Which of the following structures is not a skeletal material?

- A. Chitin
- B. Cartilage
- C. Bone
- D. Muscle

12. The reason why the flow of blood through the capillaries is very slow is \_\_\_\_\_

- A. because the walls of capillaries are very thin
- B. to avoid high — blood pressure
- C. to ensure that the individual does not get dizzy
- D. to allow adequate time for exchange of materials

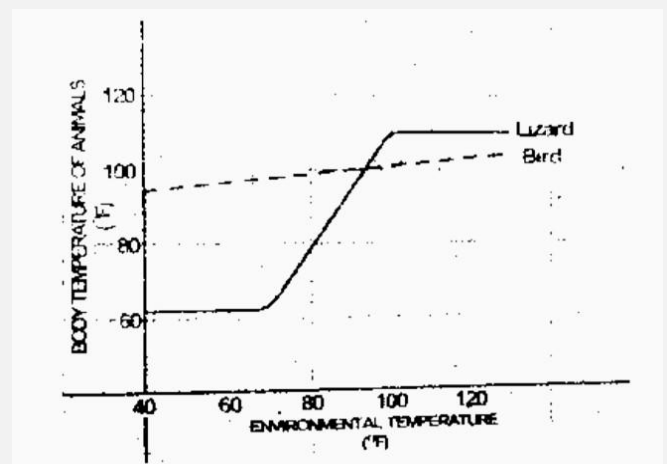
13. Which of the following groups of organisms has kidney as their excretory organ?

- A. Fishes, amphibians, birds, man
- B. Fishes, amphibians, annelids, insects
- C. Fishes, reptiles, birds, tapeworms
- D. Fishes protozoans, amphibians, man

14. Which of the following features is not a characteristic of arteries?  
Arteries \_\_\_\_\_

- A. possess valves at intervals throughout their length.
- B. have thick muscular and elastic walls
- C. carry blood away from the heart
- D. transport oxygenated blood with the exception of the pulmonary artery

**The graph below shows the results of a laboratory investigation which measured the body temperatures of a lizard and a bird under changing artificial conditions.**



15. Which of the statements below is valid?

- A. The bird's blood was always warmer than that of the lizard.

B. The body temperature of the bird varied less than that of the lizard during changes in environmental temperature.

C. The body temperature of the bird remained constant despite changes in environmental temperature.

D. The body temperature of the lizard was always close to that of the environmental temperature.

16. What physiological term can be used to describe the regulation of the body temperature of the lizard?

- A. Homeostasis
- B. Homeothermy
- C. Poikilothermy
- D. Osmoregulation

17. The reason why hospitals use saline solutions as drip instead of water is \_\_\_\_\_

- A. because salt is a preservative
- B. to prevent contamination of the body

C. to maintain the composition of body fluids

D. to increase the number of blood cells

18. The part of the ear which contains nerve cells sensitive to sound vibrations is the \_\_\_\_\_

- A. cochlea
- B. ampulla
- C. tympanum
- D. malleus

19. Spectacles with convex lenses correct long-sightedness by \_\_\_\_\_

- A. converging the Light rays before they enter the eye
- B. diverging the light rays before they enter the eye
- C. reducing light intensity before it enters the eye
- D. increasing light intensity before it enters the eye

20. A seed of a flowering plant can best be described as \_\_\_\_\_

- A. radicle and plumule
- B. the developed ovule
- C. the embryo and endosperm
- D. developed ovary

21. Which of the following processes removes carbon from the atmosphere?

- A. Putrefaction
- B. Photosynthesis
- C. volcanic eruption
- D. Burning fuels

22. Which of the following cycles involves the process of precipitation and transpiration?

- A. Water cycles
- B. Carbon cycle
- C. Nitrogen cycle
- D. Oxygen cycle

23. What is the critical limiting factor for plants below the photic zone in an aquatic ecosystem?

- A. Availability of nutrients
- B. Availability of water

- C. intensity of light
- D. Carbon dioxide concentration

24. Which of the following instruments is used to estimate the number of plants in a habitat?

- A. Pooter
- B. Pitfall trap
- C. Quadrat
- D. Sweep net

25. Which of the following statements is true about sandy soil? It \_\_\_\_\_

- A. has limited air space
- B. is light and easy to dig
- C. drains slowly
- D. is heavy and poorly aerated

26. Which of the following organisms is a primary consumer?

- A. Dog
- B. Sheep
- C. Grass
- D. Fungus

**Study the diagram of a food chain shown below and use it to answer question 27 and 28.**

P→Q→R→S→T

27. The organism designated P in the food chain above is normally sustained by energy from \_\_\_\_\_

- A. sunlight
- B. carbohydrates
- C. green plants
- D. mineral salts

28. Which of the following statements best describes the organism designated R? It \_\_\_\_\_

- A. feeds on S
- B. is a primary consumer
- C. is a producer as well as a consumer
- D. is a secondary consumer

29. Which of the following diseases is not hereditary?

- A. Albinism

- B. Scabies
- C. Haemophilia
- D. Colour blindness

30. The immediate product of meiosis in flowering plants is the \_\_\_\_\_

- A. sporophyte
- B. gametophyte
- C. zygote
- D. pollen grains

31. DNA in eukaryotic cells is contained in the \_\_\_\_\_

- A. central vacuole
- B. nucleus
- C. lysosome
- D. golgi body

32. A man who is heterozygous for the disease haemophilia marries a woman who is double recessive for haemophilia. What percentage of their offspring would have the disease?

- A. 0%

- B. 25%
- C. 50%
- D. 75%

33. Cytokinesis of mitosis is a process that ensures that \_\_\_\_\_

- A. each daughter cell gets the necessary organelle.
- B. there is distribution of a complete set of genes into each daughter cell.
- C. daughter cells inherit new genetic combinations.
- D. worn out organelles are excluded from daughter cells.

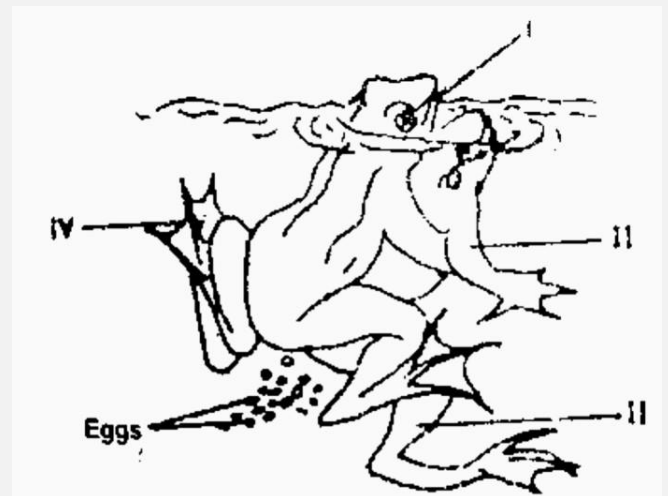
34. An animal which is active during the day is known as a \_\_\_\_\_

- A. nocturnal animal
- B. diurnal animal
- C. terrestrial animal
- D. homoatomic animal

35. Evidence of evolution include the following except \_\_\_\_\_

- A. fossil records
- B. comparative anatomy
- C. mutation of genes
- D. geographical distribution of organisms

**Use the diagram below to answer question 36 and 37.**



36. The diagram shows that the organisms are \_\_\_\_\_

- A. hermaphrodite
- B. viviparous
- C. oviparous
- D. ovoviparous

37. The breeding posture illustrated in the diagram is known as \_\_\_\_\_

- A. mating

- B. amplexus
- C. courtship display
- D. reproductive swimming

38. An accurate identification of a rapist can be carried out by it conducting a \_\_\_\_\_

- A. RNA analysis
- B. DNA analysis
- C. blood group test
- D. behavioural traits test

39. A boy who is fond of swimming in a pond finds himself passing urine with traces of blood. He is likely to have contracted \_\_\_\_\_

- A. schistosomiasis
- B. onchocerciasis
- C. poliomyelitis
- D. salmonellosis

40. The flippers of a whale and the fins of a fish are examples of \_\_\_\_\_

- A. divergent evolution
- B. coevolution

- C. continuous variation
- D. convergent evolution

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## JAMB BIOLOGY PAST QUESTIONS (PT.9)

1. The hormone which tones up the muscles of a person in time of danger is from the \_\_\_\_\_

- A. thyroid gland
- B. pancreas
- C adrenal gland
- D. liver

2. Identical twins are produced under one of the following conditions.

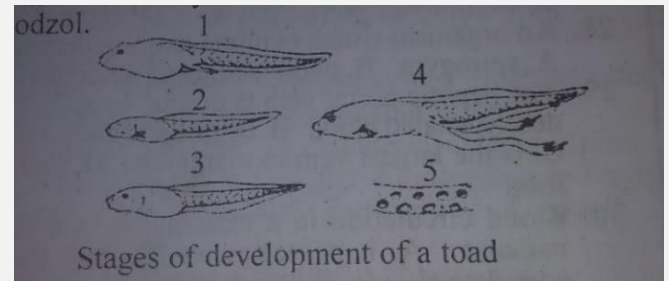
- A. Two ova fertilized at the same time by two sperms
- B. One ovum fertilized, divides to give two embryos
- C. One ovum fertilized, twins formed shortly before birth
- D. Two ova fertilized by one sperm
- E. One ovum fertilized by two sperms

3. A soil consisting of alumina and iron (II) oxide is known as \_\_\_\_\_

- A. loamy soil
- B. clayey soil

- C. laterite
- D. podzol

4.



Which of the following is the correct order of the developmental stages?

- A. 1 → 2 → 3 → 4 → 5
- B. 5 → 1 → 3 → 2 → 4
- C. 2 → 1 → 3 → 4 → 5
- D. 5 → 3 → 2 → 1 → 4

5. When a mixture of a food substance and Benedict's solution was warmed, the solution changed from blue to brick-red. This indicates the presence of \_\_\_\_\_

- A. fatty acid
- B. sucrose
- C. amino acid
- D. reducing sugar

6. An association between the root nodule of a leguminous plant and *Rhizobium* sp. is known as \_\_\_\_\_

- A. commensalism
- B. mycorrhiza
- C. parasitism
- D. symbiosis

7. Homologous pairs of chromosomes separate during \_\_\_\_\_

- A. Cytolysis
- B. Cleavage
- C. Mitosis
- D. Meiosis

8. Substances manufactured by the leaves are transported to other parts of the plant through the \_\_\_\_\_

- A. xylem
- B. companion cells
- C. sieve tubes
- D. cambium

9. The only vein that carries pure oxygenated blood is the \_\_\_\_\_

- A. renal vein
- B. pulmonary vein
- C. hepatic vein
- D. sciatic vein

10. Tsetse fly is harmful to man because it is associated with the spread of \_\_\_\_\_

- A. river blindness
- B. malaria
- C. sleeping sickness
- D. leprosy

11. The dental formula represents that of \_\_\_\_\_

- A. an omnivore
- B. a detritus feeder
- C. a carnivore
- D. a herbivore

12. The pollutants that contribute to the depletion of the ozone layer in the atmosphere are \_\_\_\_\_

- A. radioactive materials
- B. oxides of sulphur

C. oxides of carbon

D. chlorofluorocarbons

13. The irreversible life process by which new protoplasm is added to increase the size and weight of an organism can be termed \_\_\_\_\_

A. anabolism

B. catabolism

C. growth

D. development

14. An example of a caryopsis is \_\_\_\_\_

A. Guava

B. Maize grain

C. Coconut

D. Tomato

15. Osmic acid boiled with a solution of food substance gave a black precipitate. This indicates the presence of \_\_\_\_\_

A. fats and oils

B. proteins

C. amino acids

D. starch

16. In the transverse section of a dicot stem, the region lying between the endodermis and the vascular bundle is the \_\_\_\_\_

A. parenchyma

B. pericycle

C. phloem

D. hypodermis

17. The phloem parenchyma is sometimes used for \_\_\_\_\_

A. food storage

B. supporting the stem

C. production of the sieve tube

D. transporting water

18. Which of the following factors is LEAST likely to affect the animals living in a freshwater habitat?

A. Turbidity

B. Temperature

C. pH

D. Salinity

19. Which of these animals is radially symmetrical?

- A. Squid
- B. Hydra
- C. Snail
- D. Cockroach

20. Which sequence represents the correct order of organisms in a food chain?

- 1. Toad**
- 2. Mucuna**
- 3. Grasshopper**
- 4. Snake**
- 5. Hawk**

- A. 5→4→1→3→2
- B. 1→2→3→4→5
- C. 2→1→3→4→5
- D. 2→3→1→4→5

21. Night-blindness results from a deficiency of \_\_\_\_\_

- A. vitamin E
- B. vitamin A
- C. vitamin K

D. vitamin C

22. Which of the following is a polysaccharide?

- A. Glucose.
- B. Sucrose
- C. Maltose
- D. Cellulose

23. The element that is essential for the coagulation of blood is \_\_\_\_\_

- A. potassium
- B. calcium
- C. phosphorus
- D. iron

24. The soil with the highest water-retaining capacity is \_\_\_\_\_

- A. clayey soil
- B. stony soil
- C. sandy soil
- D. loamy soil

25. Underground stems which grow horizontally through the soil are \_\_\_\_\_

- A. bulbs
- B. rhizomes
- C. runners
- D. corms

26. A green plant growing in a compost pit is feeding \_\_\_\_\_

- A. holozoically
- B. parasitically
- C. saprophytically
- D. holophytically

27. The main function of the choroid is \_\_\_\_\_

- A. protection of the eyeball
- B. transmission of light
- C. supply of nutrients to tissues of the eye
- D. converging light

28. The mode of nutrition of sundew and bladderwort can be described as \_\_\_\_\_

- A. saprophytic
- B. holozoic
- C. chemosynthetic

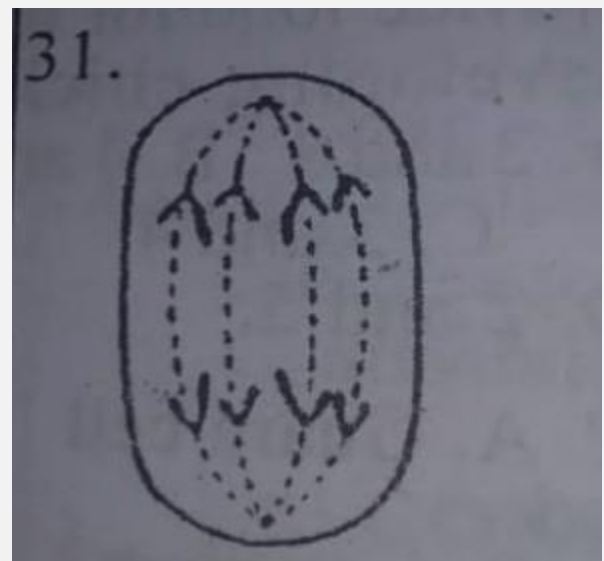
D. autotrophic

29. In man, spermatozoa are never found in the \_\_\_\_\_

- A. testis
- B. urethra
- C. epididymis
- D. prostate gland

30. A good example of a diploblastic organism is \_\_\_\_\_

- A. amoeba
- B. hydra
- C. earthworm
- D. roundworm



What stage during cell division is represented in the figure above?

- A. Prophase
- B. Metaphase
- C. Anaphase
- D. Telophase

32. The association between termites and the cellulose-digesting protozoans in their guts is an example of \_\_\_\_\_

- A. saprophytism
- B. mutualism
- C. parasitism
- D. commensalism

33. Mammals are capable of producing hypertonic urine mainly because of reabsorption in the \_\_\_\_\_

- A. Bowman's capsule
- B. urethra
- C. ureter
- D. loop of Henle

34. Which vertebra has a projection called odontoid process?

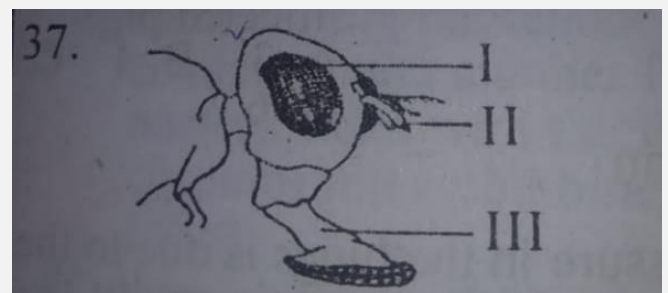
- A. Atlas
- B. Axis
- C. Thoracic
- D. Lumbar

35. The diseases caused by waterborne pathogens include \_\_\_\_\_

- A. gonorrhoea and poliomyelitis
- B. typhoid and syphilis
- C. tuberculosis and cholera
- D. typhoid and cholera

36. In Amoeba, osmoregulation is carried out by the \_\_\_\_\_

- A. pseudopodium
- B. food vacuole
- C. contractile vacuole
- D. nucleus



The structure labelled III represents the \_\_\_\_\_

- A. mandible
- B. palp
- C. proboscis
- D. labium

38. Which of the following is a sex-linked character?

- A. Sickle-cell anaemia
- B. Tongue rolling
- C. Skin colour
- D. Colour blindness

39. The nitrifying bacteria, Nitrosomonas, convert ammonia to \_\_\_\_\_

- A. nitrites
- B. nitric acid
- C. nitrates
- D. nitrous oxide

40. Which of these animals is NOT metamerically segmented?

- A. Tapeworm

- B. Earthworm
- C. Shark
- D. Crayfish

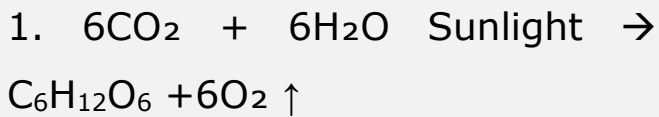
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## JAMB BIOLOGY PAST QUESTIONS (PT.10)



The process represented by the above equation is \_\_\_\_\_

- A. proteinsynthesis
- B. respiration
- C. photosynthesis
- D. transpiration

2. Which one of the following options is not true for Mucor of Rhizopus? It \_\_\_\_\_

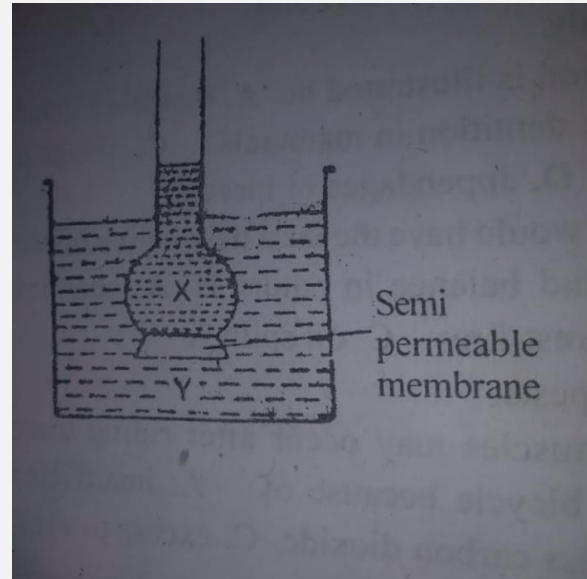
- A. grows on moist dead organic matter
- B. is a plant
- C. has cellulose cell wall
- D. reproduces asexually by producing spores

3. The vacuole of a plant cell is \_\_\_\_\_

- A. a large empty space
- B. smaller than that of an animal cell
- C. filled with air

D. surrounded by a membrane

4. What would happen if solution Y is more concentrated than solution X in the figure below?



- A. The level of X would rise, Y would fall
- B. The level of X would rise, Y would rise
- C. The levels of X and Y would stay the same
- D. The level of Y would rise, X would fall

5. A pyramid of numbers can be defined as \_\_\_\_\_



- A. the number of plants and animals in an ecosystem
- B. an arrangement of organisms according to their habitats
- C. the numerical relationships of a food chain
- D. the number of plants and animals in a population

6. Which of the following instruments is used for determining turbidity of water?

- A. Thermometer
- B. Secchi disc
- C. Rain gauge
- D. Hygrometer

7. In a Biuret test, some protein was mixed with sodium hydroxide solution. Which of the following chemicals should be added to the mixture for a positive result?

- A. Mercurous nitrate
- B. Copper sulphate
- C. Mercuric nitrate
- D. Sodium carbonate

8. Water retention is highest in soils which are rich in \_\_\_\_\_

- A. sand, poor in humus and devoid of clay
- B. clay and sand, but poor in humus
- C. clay and humus, but poor in sand
- D. clay, poor in humus and devoid of sand

9. Viruses are regarded as non-living because they \_\_\_\_\_

- A. can neither reproduce asexually nor sexually
- B. cannot survive in their respective environments
- C. do not possess characteristics that can be transmitted from one generation to the next
- D. can neither respire nor excrete

10. The correct sequence of tissues in the anatomy of a young dicotyledonous stem from the inside to the outside is \_\_\_\_\_

A. pith, phloem, cambium, xylem, parenchyma, collenchyma and epidermis

B. xylem, phloem, cambium, cortex, endodermis, collenchyma and epidermis

C. pith, xylem, cambium, phloem, collenchyma, parenchyma and epidermis

D. phloem, xylem, cambium, cortex, endodermis, collenchyma and epidermis

11. Taxism differs from tropism because \_\_\_\_\_

- A. the whole organism is affected
- B. it is a directional movement
- C. it is a response to multi-directional stimuli
- D. part of the organism is affected

12. The lumbar vertebra when compared with a thoracic vertebra has a \_\_\_\_\_

- A. longer neural spine
- B. wider neural canal
- C. thicker centrum

D. shorter transverse process

13. Which of the following is formed immediately after the first product of photosynthesis?

- A. Lipid
- B. Starch
- C. Oxygen
- D. Sugar

14. Fibrinogen and prothrombin play important roles in the \_\_\_\_\_

- A. deamination of proteins
- B. clotting of blood
- C. detoxification of substances
- D. storage of vitamins

15. The flow of air and water in or out of the mesophyll layer of a leaf is controlled by the \_\_\_\_\_

- A. stomata
- B. lenticels
- C. air spaces
- D. guard cells

16. Flame cells are the \_\_\_\_\_

- A. excretory system of worms
- B. excretory and respiratory systems of flatworms
- C. secretory system of flatworms
- D. excretory system of flatworms

17. The part of the brain that controls heartbeat and breathing is the \_\_\_\_\_

- A. olfactory lobe
- B. cerebellum
- C. cerebral hemisphere
- D. medulla oblongata

18. In a tropical rainforest, non-epiphytic ferns and allies occur as \_\_\_\_\_

- A. middle storey species
- B. upper storey species
- C. shade-loving species
- D. emergent species

19. The process of deamination is essential for the \_\_\_\_\_

- A. digestion of protein
- B. secretion of bile

- C. formation of urea
- D. formation of antibody

20. The small masses of nervous tissue in which many neurones have their nuclei are called \_\_\_\_\_

- A. dorsal roots
- B. ventral roots
- C. ganglia
- D. synapses

21. Mammals acclimatize to reduced oxygen content at high altitudes by \_\_\_\_\_

- A. the stimulation of marrow to reduce the amount of erythrocytes produced
- B. increasing the rate at which erythrocytes are destroyed
- C. the stimulation of marrow to produce more erythrocytes
- D. increasing the breakdown of the protein portion of the erythrocytes

22. The inner ear contains two main organs, namely, the \_\_\_\_\_

- A. eardrum and eustachian tube
- B. cochlea and semicircular canals
- C. oval window and ossicles
- D. pinna and cochlea

23. The factor that least affects food shortages in sub-saharan Africa is \_\_\_\_\_

- A. flooding
- B. pests
- C. mixed cropping
- D. drought

24. In a field experiment, the frequency of water leaf was observed to be 48 after 20 tosses of a 2m<sup>2</sup> quadrat. What is the density of the plant in the field?

- A. 1.2per m<sup>2</sup>
- B. 2.4 per m<sup>2</sup>
- C. 4.8 per m<sup>2</sup>
- D. 9.6 per m<sup>2</sup>

25. A man and his wife are both heterozygous for the sickle cell trait. The likely percentage of their

offspring that will be either carriers or 'sicklers' is \_\_\_\_\_

- A. 75%
- B. 50%
- C. 25%
- D. 100%

26. One adaptation of reptiles to water loss is the presence of \_\_\_\_\_

- A. keratinous scales
- B. claws on limbs
- C. long tails
- D. long sticky tongues

27. An evidence of a common ancestry for fishes, amphibians, reptiles, birds and mammals is the \_\_\_\_\_

- A. possession of wings by birds and bats
- B. cold-bloodedness of fishes, amphibians and reptiles
- C. presence of gill clefts in vertebrate embryos
- D. possession of scales by fishes and reptiles

28. One basic similarity between nervous and endocrine system is that they both \_\_\_\_\_

- A. produce widespread effects
- B. transmit very fast impulses
- C. involve the use of chemical substances
- D. produce precise and short-lived effects

29. A crucible of 5 gm weighed 10 gm after filling with fresh soil. It is then heated in an oven at 100°C for 1 hour. After cooling in a desiccator, the weight was 8 gm. The percentage of water in the soil is \_\_\_\_\_

- A. 80%
- B. 60%
- C. 20%
- D. 40%

30. A boy who is fond of swimming in a pond finds himself passing urine with traces of blood. He is likely to have contracted \_\_\_\_\_

- A. schistosomiasis
- B. onchocerciasis
- C. poliomyelitis
- D. salmonellosis

31. According to Darwin, the driving force behind evolutionary change is \_\_\_\_\_

- A. natural selection
- B. genetic drift
- C. mutation
- D. gene flow

***I. Adoption of appropriate nocturnal habits***

***II. Burrowing***

***III. Adjusting their internal body temperature***

***IV. Possession of many sweat pores***

32. Which of the above are ways in which desert animals adapt to extreme heat of the environment?

- A. **II** and **III** only
- B. **I** and **II** only
- C. **I**, **II** and **III** only

D. **I** and **IV** only

33. An example of an endospermous seed is \_\_\_\_\_

- A. cotton seed
- B. bean seed
- C. maize grain
- D. cashew nut

34. The water cycle is maintained mainly by \_\_\_\_\_

- A. evaporation of water in the environment
- B. evaporation and condensation of water in the environment
- C. condensation of water in the environment
- D. transpiration and respiration in plants

***I Growth is mainly apical.***

***II Growth is specific with definite shape.***

***III Growth is throughout life.***

35. Which of the above correctly describes the growth pattern in plants?

- A. **I**, **II** and **III** only.
- B. **II** and **III** only.
- C. **I** and **II** only.
- D. **I** and **III** only.

36. Adaptive radiation is illustrated in \_\_\_\_\_

- A. modified insect mouthparts.
- B. dentition in mammals.
- C. wings in birds and bats.
- D. appendages in insects.

37. The disaster that would have the least destructive impact on animal life and balance in nature is \_\_\_\_\_

- A. chemical pollution
- B. forest fires
- C. oil spillage
- D. grasshopper pests

38. Fatigue of leg muscles may occur after riding many kilometres on a bicycle because of \_\_\_\_\_

- A. insufficient glucose
- B. excess carbon dioxide
- C. excess protein
- D. insufficient oxygen

39. An example of monohybrid inheritance in man is \_\_\_\_\_

- A. astigmatism
- B. cretinism
- C. hyperthyroidism
- D. albinism

40. The greatest amount of energy will be obtained by the oxidation of 100kg of \_\_\_\_\_

- A. meat
- B. butter
- C. sugar
- D. biscuits

# ~~DISCLAIMER~~

These are **not** JAMB expo questions for this year, but past questions of previous years.

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