

# JAMB

## BIOLOGY

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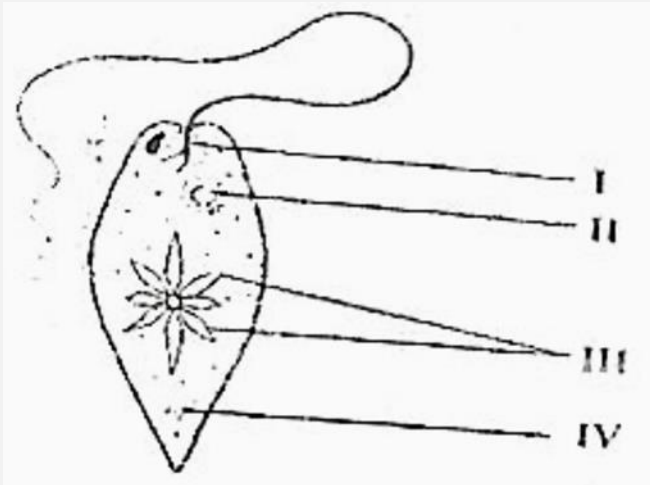
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## JAMB BIOLOGY PAST QUESTIONS (PT.1)

Use the diagram below to answer 1 – 2.



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

- A. nucleus
- B. eyespot
- C. basal granule
- D. contractile vacuole

2. The part responsible for photosynthesis is labelled \_\_\_\_\_

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

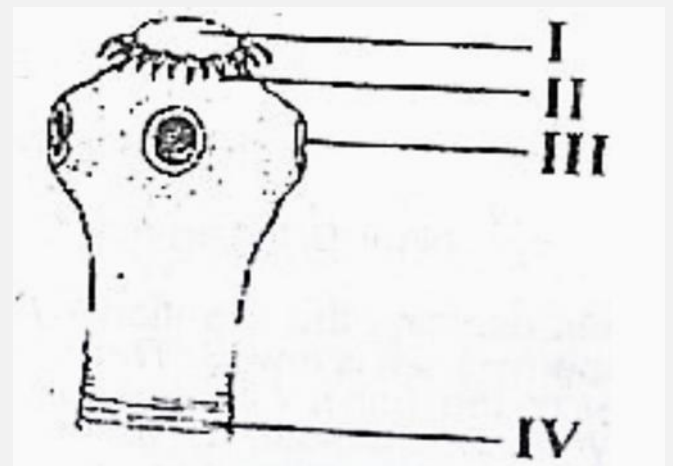
3. The lowest level of organization in living organisms is \_\_\_\_\_

- A. organ
- B. cell
- C. system
- D. tissue

4. Which of the following is the most complex according to their cellular level of organization?

- A. Heart
- B. Hair
- C. Euglena
- D. Hydra

Use the diagram below to answer questions 5 – 7.



5. The organs for attachments to the lining of the host's intestine are labelled \_\_\_\_\_

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

**6.** The young proglottid is represented by \_\_\_\_\_

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

**7.** Which of the following organisms is multi-cellular?

- A. Chlamydomonas
- B. Spirogyra
- C. Amoeba
- D. Euglena

**8.** In bryophytes, sex organs are produced in the \_\_\_\_\_

- A. protonema
- B. sporophyte
- C. gametophyte
- D. rhizoid

**9.** Seed plants are the most dominant vegetation on land because of \_\_\_\_\_

- A. their motile gametes
- B. their ability to photosynthesize
- C. efficient seed dispersal
- D. availability of water

**10.** Which of the following is an arboreal organism?

- A. Elephant
- B. Fish
- C. Antelope
- D. Bird

**11.** Which of the following will be true of dog II which lost its tail in an accident if it mates with dog III?

- A. all its offspring will be born without tails
- B. 3/4 of its offspring will be born without tails
- C. none of its offspring will be born without a tail
- D. 1/4 of its offspring will be born without tails

**12.** If the dogs are offspring of a monohybrid cross and the gene G for grey head is dominant over allele *g*, the individual whose genotype is likely to be *gg* is \_\_\_\_\_

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

**13.**  $i^2/1$ ,  $c^0/0$ ,  $pm^3/2$ ,  $m^3/3$ .

The general formula above represents that of \_\_\_\_\_

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

**14.** A circulatory system is very essential in mammals but not in smaller organisms like Amoeba because \_\_\_\_\_

- A. amoeba lives in freshwater
- B. diffusion is sufficient to transport materials in Amoeba

C. amoeba lacks blood containing haemoglobin

D. amoeba exhibits anaerobic respiration

**15.** In vascular plants, the sieve tubes and companion cells are present in the \_\_\_\_\_

- A. cambium
- B. cortex
- C. xylem
- D. phloem

**16.** The stomata of leaves are similar in function to the \_\_\_\_\_

- A. pharynx of humans
- B. scales of fish
- C. spiracle of insects
- D. trachea of toads

**17.** The use of moist skin for respiration in amphibians is known as \_\_\_\_\_

- A. cellular respiration
- B. cutaneous respiration
- C. buccal respiration

D. pulmonary respiration

**18.** Water in plants is removed as water vapour through the process of \_\_\_\_\_

- A. diffusion
- B. osmosis
- C. evaporation
- D. transpiration

**19.** An example of an organ of perennation in plants is \_\_\_\_\_

- A. rhizome
- B. seed
- C. petal of a flower
- D. calyx of flower

**20.** Alternation of generation is a feature shown in \_\_\_\_\_

- A. mosses
- B. fungi
- C. grasses
- D. conifers

**21.** Which of these below correctly describes the growth pattern in plants?

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

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

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

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

**22.** Coordination and regulation of body activities in mammals are achieved by the \_\_\_\_\_

- A. nerves and muscle
- B. nerves and hormones
- C. nerves only
- D. hormones only

**23.** The Cerebellum of the Brain controls \_\_\_\_\_

- A. reflex action
- B. muscular activity
- C. emotional expressions

D. the Endocrine system

**24.** The part of the brain responsible for peristalsis is the \_\_\_\_\_

- A. Olfactory Lobe
- B. Medulla Oblongata
- C. Hypothalamus
- D. Thalamus

**25.** Which of the following instruments is used for measuring atmospheric pressure?

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

**26.** The influence of soil on organisms in a habitat is referred to as \_\_\_\_\_

- A. edaphic
- B. physiographic
- C. biotic
- D. topographic

**27.** The genetic make-up of an organism is described as \_\_\_\_\_

- A. allele
- B. chromosome
- C. phenotype
- D. genotype

**28.** The major limiting factor of productivity in the aquatic habitat is \_\_\_\_\_

- A. food
- B. temperature
- C. water
- D. sunlight

**29.** Which of the following group of organisms feeds directly on green plants?

- A. Primary Consumers
- B. Secondary Consumers
- C. Producers
- D. Decomposers

**30.** A characteristic feature of tropical rain forest is that it \_\_\_\_\_

- A. Contains trees with narrow leaves
- B. Contains large number of plant species
- C. Contains fewer number of plant species
- D. Has total annual rainfall of less than 50cm

**31.** The study of how and why population size change over time is \_\_\_\_\_

- A. Population estimation
- B. Population dynamics
- C. Population ecology
- D. Population Cycle

**32.** A severe and long dry season is a characteristic feature of \_\_\_\_\_

- A. Sahel Savanna
- B. Mangrove Swamps
- C. Sudan Savanna
- D. Guinea Savanna

**33.** Which of the following is a nitrogen fixing blue-green algae of soil?

- A. Rhizobium
- B. Nitrosomonas
- C. Clostridium
- D. Anabaena

**34.** The soil with highest water-retaining capacity is \_\_\_\_\_

- A. Clayey Soil
- B. Stoney soil
- C. Sandy soil
- D. Loamy Soil

**35.** The causative agent of Poliomyelitis is \_\_\_\_\_

- A. Virus
- B. Fungus
- C. Protozoan
- D. Bacterium

**36.** One of the ways of controlling noise pollution in urban areas is \_\_\_\_\_

- A. by siting industries away from residential areas
- B. that fuel should be completely combusted by engines

- C. by planting trees on both sides of the road  
D. by wearing ear devices

**37.** A constituent of the exhaust fumes from electricity generating sets which causes serious pollution is \_\_\_\_\_

- A. Carbon (II) Oxide  
B. Water Vapour  
C. Ozone  
D. Carbon (IV) Oxide

**38.** Which of the following is true of smallpox?

- A. It is transmitted by bacteria  
B. It can effectively be controlled with antibiotics  
C. It can effectively be controlled by vaccination  
D. It is a water-borne infection

**39.** A pollutant that is mostly associated with acid rain is \_\_\_\_\_

- A. Nitrogen (IV) Oxide  
B. Ozone

- C. Fluorine  
D. Boron

**40.** When the adults have reach a certain degree of weakness, the process of binary fission is replaced by conjugation in \_\_\_\_\_

- A. Paramecium  
B. Euglena  
C. Amoeba  
D. Plasmodium

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## JAMB BIOLOGY PAST QUESTIONS (PT.2)

**1.** Which of the following has the most primitive respiratory system?

- A. insect
- B. fish
- C. snail
- D. mouse

**2.** One adaptation shown by hydrophytes in fresh water habitats is the \_\_\_\_\_

- A. waxy cuticle on shoot surface
- B. poor development of roots and xylem tissues
- C. well-developed roots and supporting system
- D. leaves reduced to spines

**3.** Which of the following use diffusion as the principal method of gaseous exchange?

- A. grasshopper
- B. rat spines
- C. lizard
- D. earthworm

**4.** The theory which supports the view that the large muscles developed by an athlete will be passed on to the off spring was proposed by \_\_\_\_\_

- A. Mendel
- B. Darwin
- C. Lamarck
- D. Pasteur

**5.** The chromosomes of members of the kingdom *Monera* are within the \_\_\_\_\_

- A. nucleoplasm
- B. nucleus
- C. nucleolus
- D. cytoplasm

**6.** The mangrove swamp in Nigeria is restricted to the \_\_\_\_\_

- A. Sahel savanna
- B. Guinea savanna
- C. Tropical rainforest
- D. Sudan savanna

**7.** The pancreas secretes enzymes for the digestion of \_\_\_\_\_

- A. fats, proteins and carbohydrates
- B. fats, vitamins and cellulose
- C. fats, carbohydrates and vitamins
- D. proteins, cellulose and minerals

**8.** The causative agent of bird flu is a \_\_\_\_\_

- A. protozoan
- B. virus
- C. bacterium
- D. fungus

**9.** A water medium is necessary for fertilization in \_\_\_\_\_

- A. conifers
- B. angiosperms
- C. ferns
- D. fungi

**10.** An example of a sex-linked trait is the \_\_\_\_\_

- A. colour of the skin in humans
- B. ability to roll the tongue
- C. possession of facial hair in adult humans
- D. ability to grow, long hair in females

**11.** In which of the following Nigerian states can *montane* vegetation be found?

- A. Bauchi
- B. Plateau
- C. Taraba
- D. Enugu

**12.** Which of the following is true of cloning?

- A. it is welcomed as an ethically and normally sound science
- B. it involves the asexual multiplication of the tissues of the original organism
- C. the clone is similar to but not exactly like the original organism
- D. only one cell of the original organism is needed to imitate the process

**13.** The process of shedding the exoskeleton of an arthropod is known as \_\_\_\_\_

- A. ecdysis
- B. in star formation
- C. metamorphosis
- D. osmosis

**14.** Which of the following is a major cause of constipation in humans?

- A. lack of roughage
- B. vitamin B
- C. vitamin E
- D. lack of salts

**15.** In mammals, the organ directly on top of the kidney is the \_\_\_\_\_

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

**16.** An accurate identification of a rapist can be carried out by conducting a \_\_\_\_\_

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

**17.** An example of a fish that aestivates is \_\_\_\_\_

- A. croaker
- B. lung fish
- C. shark
- D. cat fish

**18.** The opening and closing of the stoma are regulated by \_\_\_\_\_

- A. respiration
- B. osmosis
- C. diffusion
- D. transpiration

**19.** Which of the following is common to the mosquito, housefly and blackfly?

- A. they are parasites of man
- B. their immature stages are aquatic
- C. they undergo complete metamorphosis
- D. their adults have two pairs of wings

**20.** The organs that will be most useful to giant African rats in finding their way in underground habitats are the \_\_\_\_\_

- A. nostrils
- B. eyes
- C. vibrissae
- D. tails

**21.** A crucible of 5gm weighed 10gmafter 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 8gm. The percentage of water in the soil is \_\_\_\_\_

- A. 0.8
- B. 0.2
- C. 0.4

D. 0.6

**22.** The waste product of plants used in the conversion of hide to leather is \_\_\_\_\_

- A. alkaloid
- B. resin
- C. tannin
- D. gun

**23.** The correct sequence of the movement of urea during formation is \_\_\_\_\_

- A. glomerulus - Bowman's capsule  
- convoluted tubule - Henle's loop  
- collecting tubule
- B. convoluted tubule - glomerulus  
- Henle's loop - Bowman's capsule  
-collecting tubule
- C. glomerulus - Bowman's capsule  
- convoluted tubule - Henle's loop  
- collecting tubule
- D. convoluted tubule - Bowman's capsule - Henle's loop -glomerulus  
- collecting tubule

**24.** In lizards, the lowering of the gular fold is used to \_\_\_\_\_

- A. defend their territory
- B. attract mates
- C. frighten enemies
- D. catch insects

**25.** The photosynthetic pigments include \_\_\_\_\_

- A. chloroplast and cytochromes
- B. melanin and haemoglobin
- C. chlorophyll and carotenoids
- D. carotenoids and haemoglobin

**26.** The highest level of ecological organization is the \_\_\_\_\_

- A. ecosystem
- B. niche
- C. biosphere
- D. population

**27.** A biotic factor which affects the distribution and abundance of organism in a terrestrial habitat is \_\_\_\_\_

- A. pH
- B. competition
- C. temperature
- D. light

**28.** The eye defect that rises because the cornea is not curved smoothly is \_\_\_\_\_

- A. astigmatism
- B. short-sightedness
- C. long-sightedness
- D. presbyopia

**29.** Which of the following is an example of parasitism?

- A. a squirrel living in an abandoned nest of a bird
- B. mistletoe growing on an orange tree
- C. fungi growing on a dead tree branch
- D. cattle egrets taking tasks from the body of cattle

**30.** The increasing order of the particle size in the following soil types is \_\_\_\_\_

- A. cattle sand – clay-gravel
- B. clay - silt sand – gravel
- C. silt - clay - sand - gravel
- D. clay - sand - silt – gravel

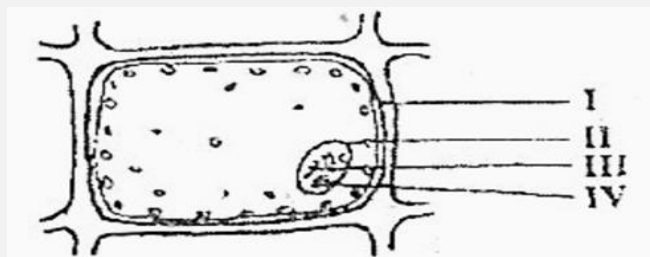
**31.** Which of following factors can bring about competition population?

- A. emigration
- B. drought
- C. mortality
- D. dispersion

**32.** Stunted growth and poor root development are a result of a deficiency in \_\_\_\_\_

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

**Use the diagram below to answer question 33 – 34.**



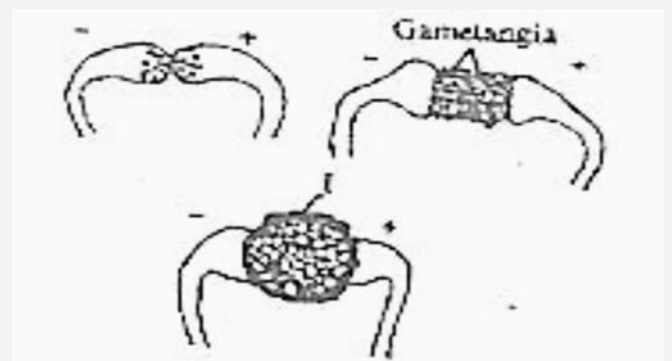
**33.** The cell organelle solely responsible for respiration is the \_\_\_\_\_

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

**34.** The organelle responsible for heredity is \_\_\_\_\_

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

**Use the diagram below to answer questions 35 – 36.**



**35.** The process illustrated is \_\_\_\_\_

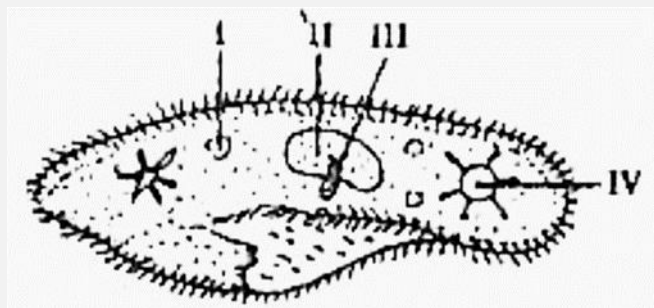
- A. gametogenesis

- B. sexual reproduction in Rhizopus
- C. sexual reproduction in Spirogyra
- D. sporulation

**36.** The structure labelled I is the \_\_\_\_\_

- A. zygospore
- B. conidiophore
- C. sporangium
- D. hypha

**Use the diagram below to answer questions 37 – 38.**



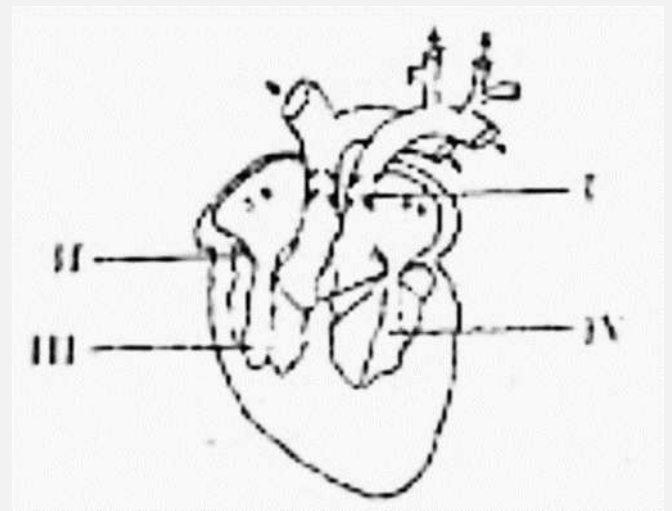
**37.** The organelle responsible for sexual reproduction is \_\_\_\_\_

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

**38.** The part labelled IV is responsible for \_\_\_\_\_

- A. respiration
- B. ingestion
- C. locomotion
- D. osmoregulation

**Use the diagram below to answer questions 39 – 40.**



**39.** The part labelled I is the \_\_\_\_\_

- A. pulmonary artery
- B. bicuspid valve
- C. aorta
- D. vena cava

**40.** Oxygenated blood is pumped to the entire body from the part labelled \_\_\_\_\_

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

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## JAMB BIOLOGY PAST QUESTIONS (PT.3)

**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

**Use the data below to answer questions 5 – 6.**

**I. Tissues**

**II. System**

**III. Cell**

**IV. Organs**

**5.** Which is the level of organization of a leaf?

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

**6.** 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

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

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

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

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

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

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

**10.** 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

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

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

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

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

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

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

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

**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 ventures out of water and lives 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.** All living organisms are constantly involved in a struggle for existence. This was proposed by \_\_\_\_\_

A. Morgan

B. Darwin

C. Lamarck

D. Wallace

**37.** Adaptive radiation is illustrated in \_\_\_\_\_

A. modified insect mouthparts

B. dentition in mammals

C. wings in birds and bats

D. appendages in insects

**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.4)

**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 \_\_\_\_\_

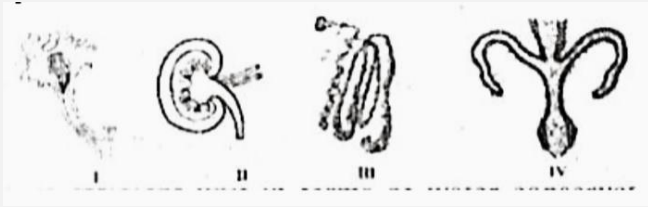
- A. hip
- B. ankle
- C. skull
- D. elbow

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

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

***Use the diagram to answer the questions 7 – 8.***





**7.** The excretory organ of an earthworm is represented by \_\_\_\_\_

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

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

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

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

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

**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  $15\text{m}^2$  habitat, the total number of Tridax counted using a  $1.6\text{m}^2$  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

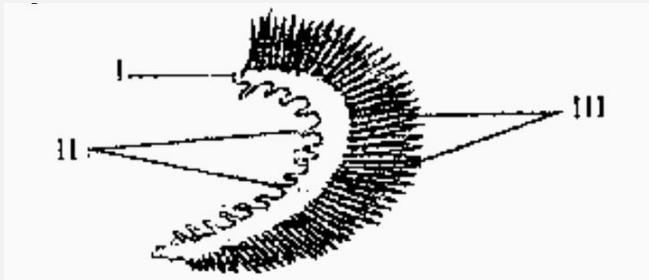
**30.** The soil type with the least ability to retain nutrients is \_\_\_\_\_

- 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 questions 32 – 33.**



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

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

**33.** The part labelled II is the \_\_\_\_\_

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

**34.** The effect of overcrowding is \_\_\_\_\_

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

D. reduced mortality

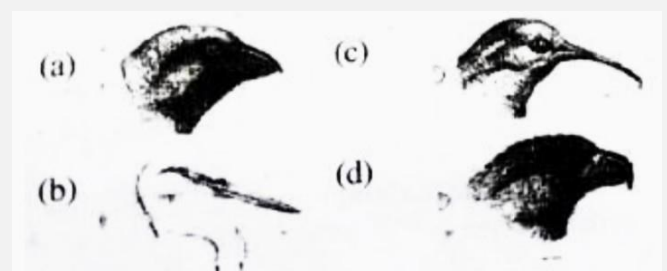
**35.** The vertebrae that allows the skull to nod and rotate are \_\_\_\_\_

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

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

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

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



**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.

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## JAMB BIOLOGY PAST QUESTIONS (PT.5)

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

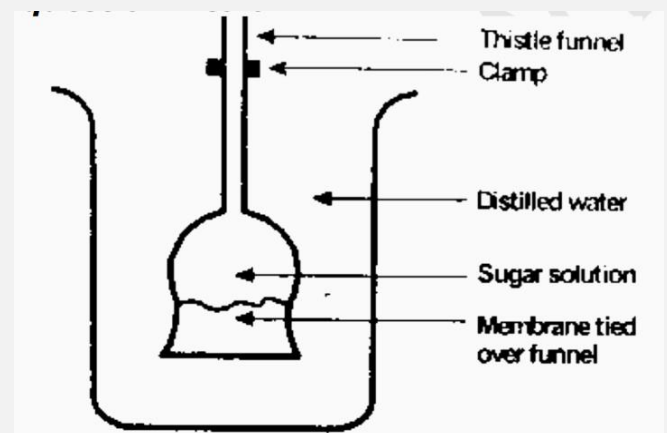
2. A beaker of pond water containing few specimens of Euglena was placed in a dark room for two weeks. At the end of this period, the specimens of Euglena were still alive because they were \_\_\_\_\_

- 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 – 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

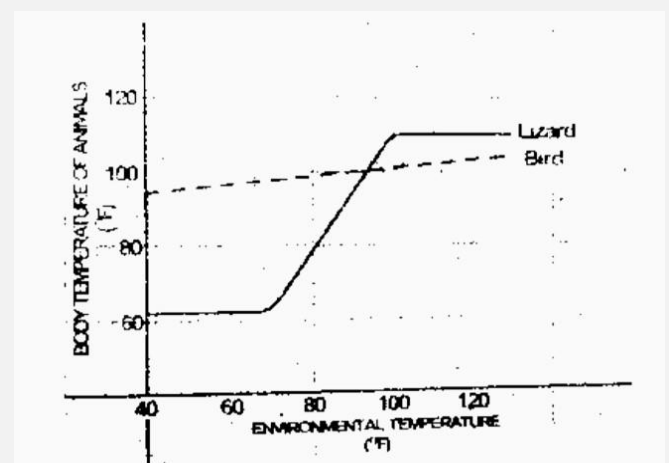
**13.** Which of the following groups of organisms has kidney as their excretory organ?

- 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 values at internals 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 – 28.**

$P \rightarrow Q \rightarrow R \rightarrow S \rightarrow T$

**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

**36.** A couple has 10 children, all female. Which of the following best explains the situation?

- A. The sex determination was by the man's X chromosome
- B. The man's sperm count is low
- C. The woman is not capable of producing male children
- D. The sex determination was by the man's Y chromosome

**37.** A biological agent with antiviral property is \_\_\_\_\_

- A. Interferon
- B. enzyme
- C. antibiotic
- D. disinfectant

**38.** One of the advantages of outbreeding is \_\_\_\_\_

- A. pest tolerance
- B. disease resistance
- C. fast growth
- D. tall height

**39.** An individual with blood group AB can receive blood from those in blood group(s) \_\_\_\_\_

- A. A, B, AB, O
- B. A, AB and O only
- C. AB only
- D. A and B only

**40.** The stream-lined shape of fishes is an adaptation for \_\_\_\_\_

- A. Securing mates
- B. easy movement
- C. obtaining food
- D. defence and attack

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## JAMB BIOLOGY PAST QUESTIONS (PT.6)

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

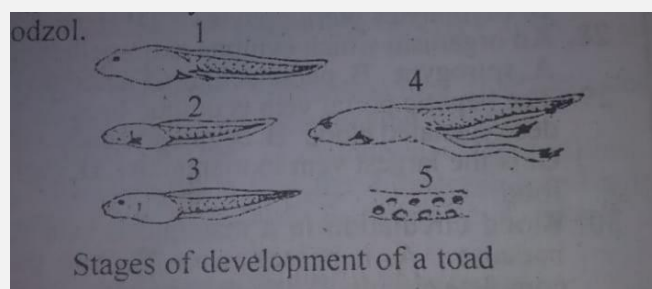
- A. thyroid gland
- B. pancreas
- C adrenal gland
- D. liver

**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. Two ova fertilized by one sperm
- D. 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 \_\_\_\_\_

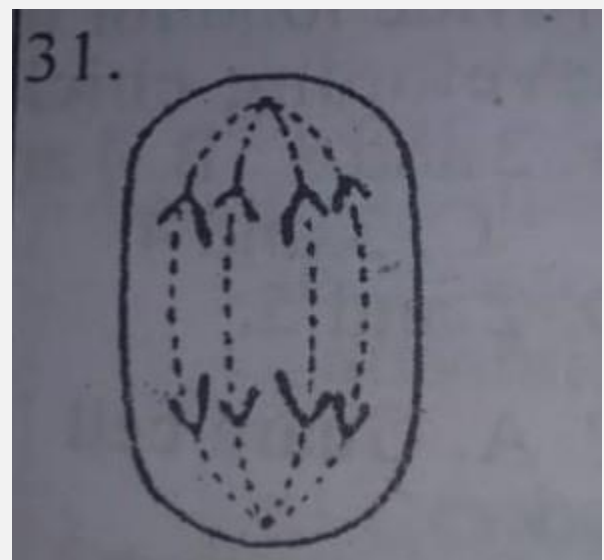
- A. saprophytic
- B. holozoic
- C. chemosynthetic
- D. autotrophic

**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



**31.** 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?

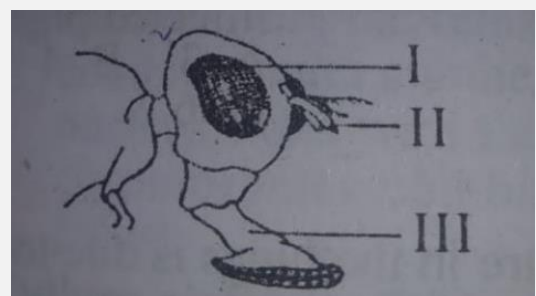
- A. Atlas
- B. Axis
- C. Thoracic
- D. Lumbar

**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



**37.** 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

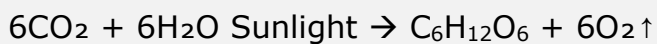
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## JAMB BIOLOGY PAST QUESTIONS (PT.7)



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

- A. protein synthesis
- B. respiration
- C. photosynthesis
- D. transpiration

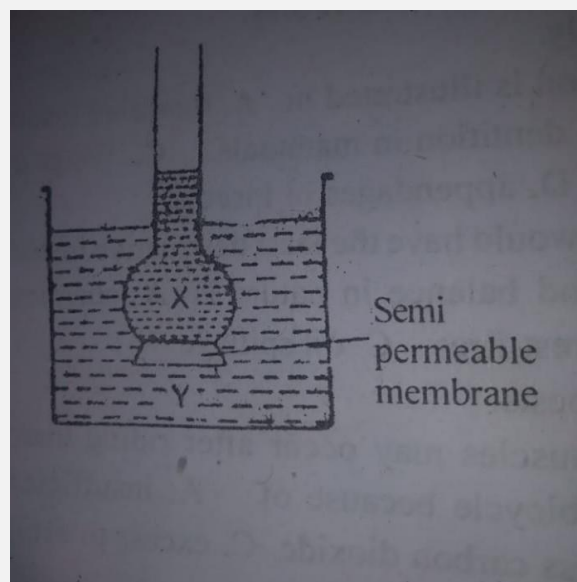
2. Which one of the following options is not true for Mucor or Rhizopus? It \_\_\_\_\_

- 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  $2\text{m}^2$  quadrat. What is the density of the plant in the field?

- A. 1.2per  $\text{m}^2$
- B. 2.4 per  $\text{m}^2$
- C. 4.8 per  $\text{m}^2$
- D. 9.6 per  $\text{m}^2$

**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

**35.** An example of a poikilothermic organism is a \_\_\_\_\_

- A. Lizard
- B. Cockroach
- C. rabbit
- D. bird

**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~~

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