



# **BIOLOGY**

# **BOOKS - SARAS PUBLICATION**

# **MODEL QUESTION PAPER 1**

# Exercise

1. 'Systema Naturae' was written by

A. Ernst Mayr

**B.** Carolus Linnaeus

C. RH Whittaker

D. WM Stanley

# Answer:



- 2. Identify the correct statements from the below about "Meiosis" .
- (I) Meiosis takes place in the reproductive organs
- (II) Results in the formation of gametes
- (III) Haploid sperms are made in testes
- (IV) Haploid eggs are made in overies of animals
  - A. I, II and III
  - B. II, III and IV
  - C. I and IV
  - D. II and III

**3.** Five kingdom system of classification suggested by RH Whittaker

is not based on

A. the presence or absence of a well defined nucleus

B. mode of reproduction

C. mode of nutrition

D. complexity of body organisation

#### Answer:

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4. Archaebacteria differ from eubacteria in

A. cell membrane structure

B. mode of nutrition

C. cell shape

D. mode of reproduction

# Answer:

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5. Phylogenetic system of classification is based on

A. evolutionary relationships

B. morphological features

C. chemical constituents

D. floral characters

6. A marine cartilaginous fish that can produce electric current is

A. Pristis

B. Torpedo

C. Trygon

D. Scoliodon

#### Answer:



7. Select the correct statements(I) From the region of elongation, some of the epidermal cells for root hairs,(II)Pneumatophores are seen in Rhizophora,(III)Adventitious roots are seen in banyan tree, (IV) Maize and sugarcane have prop roots A. I and IV

B. I, III and IV

C. I, II and IV

D. II and III

Answer:

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# 8. Describe cyathium inflorescence

A. scorpioid cyme showing central female, many peripheral

male flowers

B. scorpioid cyme showing central male, many peripheral

female flowers

C. dichasial cyme showing two whorls of 3-9 flowers

D. dichasial cyme showing two whorls, one of the male and

another of female flowers

# Answer:

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# 9. Match the following columns

	-
column I	column II
(Stem <sup>r</sup>	(Found in)
modifications)	
A. Underground	1. Euphorbia
stem	
B. Stem tendril	2. Opuntia
C. Stem thorns	3. Potato
D. Flattened stem	4. Citrus
E. Fleshy cyli-	5. Cucumber
ndrical stem	

Α.

$$Codes: (A) - (1), (B) - (2), (C) - (3), (D) - (5), (E) - (4)$$
  
B. Codes:

$$Codes: (A) - (2), (B) - (3), (C) - (4), (D) - (5), (E) - (1)$$

C.

$$Codes: (A) - (3), (B) - (4), (C) - (5), (D) - (1), (E) - (2)$$

D.

$$Codes: (A) - (3), (B) - (5), (C) - (4), (D) - (2), (E) - (1)$$

#### **Answer:**



10. Tracheids differ from other treachery elements in

A. having casparian strips

B. being imperforate

C. lacking nucleus

D. being lignified

#### Answer:

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11. Companion cells are closely associated with \_\_\_\_\_

A. sieve elements

B. vessel elements

C. trichomes

D. guard cells

12. The striated appearance of a myofibril is due to the distribution

pattern of

A. actin and myosin

**B.** fascicles

C. troponin

D. meromyosin

#### Answer:

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13. The lining of intestine and kidneys in human is

A. keratinised

B. brush border

C. ciliated

D. None of the above

# Answer:



14. In cockroach, the arthrodial membrane

A. forms the hindwings

B. covers the compound eyes

C. forms the hypopharynx

D. joins the sclerites

15. Which one of the following also acts as a catalyst in a bacterial

cells?

A. snRNA

B. hnRNA

C. 23S rRNA

D. 5SrRNA

#### Answer:



16. Glutamineis an important protein in

A. potato

B. Wheat

C. Soyabean

D. spinach

Answer:

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17. At metaphase, chromosomes are attached to the spindle fibres

by their

A. Satellites

**B.** Secondary constrictions

C. Kinetochores

D. Centromere



18. Transpiration is manifestation of

A. turgor pressure

B. wall pressure

C. root pressure

D. None of these

#### Answer:

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**19.** In land plants the guard cells are different from other epidermal cells in having

A. mitochondria

- B. endoplasmic reticulum
- C. chloroplasts
- D. cytoskeleton

# Answer:



20. Which one of the following is not an essential mineral element

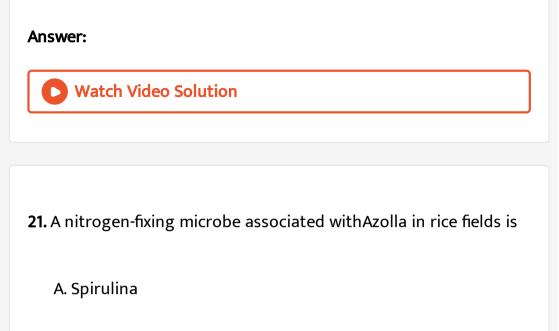
for plants, while the remaining three are?

A. Iron

B. Manganese

C. Cadmium

D. Phosphorus



B. Anabaena

C. Frankia

D. Tolypothrix



**22.** The correct sequence of cell organelles during photorespiration is

A. chloroplast - Golgi bodies- mitochondria

B. chloroplast-rough endoplasmic reticulum - dictyosomes

C. chloroplast- mitochondria -peroxisome

D. chloroplast - vacuole -peroxisome

# Answer:



# 23. CAM pathway is observed in

A. pineapple

B. maize

C. sunflower

D. sugarcane

Answer:

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**24.** In which one of the following processes  $CO_2$  is not released?

A. Aerobic respiration in plants

B. Aerobic respiration in animals

C. Alcoholic fermentation

D. Lactate fermentation



**25.** Which of the metabolites is common to respiration mediated breakdown of fat, carbohydrates and proteins?

A. Glucose - 6-phosphate

B. Fructose 1,6-bisphosphate

C. Pyruvic acid

D. Acetyl Co - A

Answer:

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**26.** What is the role of bile in digestion of fats.

A. act as coenzymes during the digestion of carbohydrates

B. emulsify fats and facilitate their absorption

C. aid in the break-up of proteins into amino acids and their

absorption

D. stimulate the pancreas to release its enzymes

# Answer:

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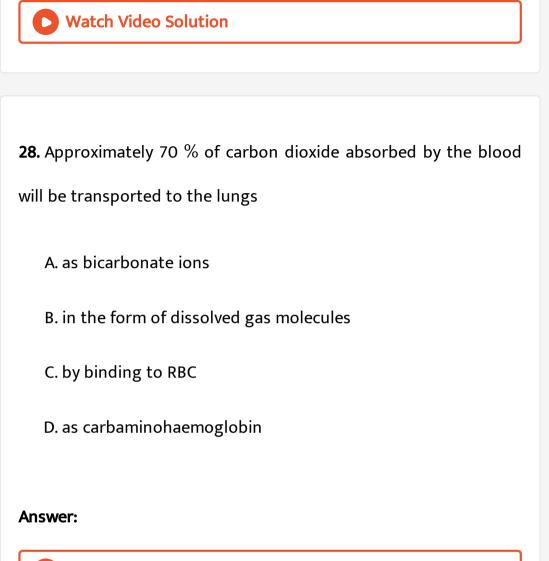
**27.** If for some reason our goblet cells are non-functional this will adversely affect

A. production of somatostatin

B. secretion of sebum from the sebaceous glands

C. maturation of sperms

D. smooth movement of food downwards the intestine



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29. The volume of a air that can be breathed in by maximum forced

inspiration over and above the normal inspiration is called

- A. expiratory reserve volume
- B. inspiratory reserve volume
- C. vital capacity
- D. inspiratory capacity

# Answer:



30. In a typical heart , if EDV is 120 mL of blood and ESV is 50 mL of

blood, the stroke Volume (SV) is

A. 120 -50 = 70 mL

- B. 120 + 50 = 170 mL
- C. 120 imes 50 = 6000 mL

D. 120  $\div$  52 = 2.3mL

# Answer:

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**31.** Which of the following causes an increase in sodium reabsorption in the distal convoluted tubule

A. Increase in aldosterone levels

B. Increase in antidiuretic hormone levels

C. Decrease in aldosterone levels

D. Decrease in antidiuretic hormone levels

#### Answer:

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**32.** The principal nitrogenous excretory compound in human is synthesized .....

A. in kidneys, but eliminated mostly through liver

B. in kidneys as well as eliminated by kidneys

C. in liver and also eliminated by the same through bile

D. in the liver, but eliminated mostly through kidneys

#### Answer:

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33. Chemical ions responsible for muscle contraction are

A.  $Ca^{2+}$ 

B.  $Na^+$  and  $K^+$ 

C.  $Na^+$  and  $Ca^{2+}$ 

D.  $Ca^{2+}$  and  $Mg^{2+}$ 

#### Answer:

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34. The U-shaped bone present at the base of the buccal cavity is

A. malleus

B. ethmoid

C. zygomatic

D. hyoid

# Answer:

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**35.** How do parasympathetic neural signals affect the working of the heart

A. Reduce both heart rate and cardiac output

B. Heart rate is increased without affecting the cardiac output

C. Both heart rate and cardiac output increase

D. Heart rate decreases, but cardiac output increases

#### Answer:

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36. Which part of the human ear plays no role in hearing as such,

but is otherwise very much required?

A. Eustachian tube

B. Organ of Cord

C. Vestibular apparatus

D. Ear ossicles

#### Answer:

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37. What is correct to say about the hormone action in humans?

A. Glucagon is secreted by  $\beta$  - cells of islets of Langerhans and

stimulates glycogenolysis

- B. Secretion of thymosin is stimulated with ageing
- C. In female, FSH first binds with specific receptors on ovarian

cell membrane

D. FSH stimulates the secretion of oestrogen and progesterone

# Answer:

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**38.** Injury to adrenal cortex is not likely to affect the secretion of which one of the following?

A. Aldosterone

B. Both androstenedione and dehydroepiandrosterone

C. Adrenaline

D. Cortisol



39. Banana is vegetatively propagated by

A. tubers

B. rhizomes

C. bulbs

D. suckers

# Answer:



40. Asexual reproduction in fungi takes place by

A. endospore

B. gametangia

C. exospore

D. conidiospore

#### Answer:



# 41. Non-albuminous seed is produced in

A. maize

B. castor

C. wheat

D. pea

**Answer:** 

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42. Which one of the following statement is correct?

A. Hard outer layer of pollen is called intine

B. Sporogenous tissue is haploid

C. Endothecium produces the microspores

D. Tapetum nourishes the developing pollen

#### Answer:

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43. Pappus helps in dispersal of pollen in

A. Asteraceae

**B. Brassicaceae** 

C. Malvaceae

# D. Solanaceae

#### Answer:



**44.** The shared terminal duct of the reproductive and urinary system in the human male is

A. urethra

B. ureter

C. vas deferens

D. vas efferentia

#### Answer:

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45. Twins may be identical or non-identical. Identical twins are

A. monozygotic

B. isozygotic

C. bizygotic

D. All of these

# Answer:

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46. \_\_\_\_\_ is a hormone releasing IUD

A. Multiload 375

B. LNG 20

C. Cervical cap

D. Vault

#### Answer:



**47.** The technique called Gamete Intra fallopian Transfer (GIFT) is recommended for those females

A. who cannot produce an ovum

B. who cannot retain the foetus inside uterus

C. who cannot provide suitable environment for fertilisation

D. whose cervical canal is too narrow to allow passage for the

sperms



48. A human female with Turner's syndrome

A. has 45 chromosomes with XO

B. has one additional X-chromosome

C. exhibits male characters

D. is able to produce children with normal husband

#### Answer:



**49.** A normal-visioned man whose father was colour blind, marries a woman whose father was also colour blind. They have their first child as a daughter. What are the chances that this child would be colourblind? A. 1

B. 0

C. 0.25

D. 0.5

Answer:

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50. Mendel's principle of segregation means that the germ cells

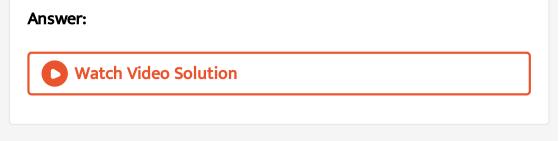
always receive

A. one pair of alleles

B. one quarter of the genes

C. one of the paired alleles

D. any pair of alleles



**51.** Removal of introns and joining of exons in a defined order during transcription is called

A. looping

B. inducing

C. slicing

D. splicing



**52.** Which one of the following is not a part of a transcription unitinDNA?

A. The inducer

B. A terminator

C. A promoter

D. The structural gene

# Answer:

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**53.** Forelimbs of cat, lizard used in walking forelimbs of whale used swimming and forelimbs of bats used in flying are an example of:

A. analogous organs

B. adaptive radiation

C. homologous organs

D. convergent evolution

### Answer:

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54. The primate which existed 15 mya among these was

A. Homo habilis

**B.** Australopithecus

C. Ramapithecus

D. Homo erectus

**55.** Which one of the following statements is correct with respect to AIDS?

A. The HIV can be transmitted through eating food together

with an infected person

B. Drug addicts are least susceptible to HIV infection

C. AIDS patients are being fully cured cent per cent with proper

care and nutrition

D. The causative HIV retrovirus enters helper T-lymphocytes

thus, reducing their numbers

56. Production of monoclonal antibondies by

A. obtained from a cell and act on one antigen

B. obtained from group of cells and act on more than one

antigens

C. obtained from a group of same type of cells and act on

single antigen

D. obtained from a group of same type of cells and act on more

than one antigens

#### Answer:



57. Which one of the following is breed of cattle?

A. Ayrshire

B. Ghagus

C. Kadaknath

D. Scampi

Answer:

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58. Which of the following is a case of wrong matching?

A. Micropropagation- In vitro production of plants in large

number

- B. Callus Unorganised mass of cell produced in tissue culture
- C. Callus Unorganised mass of cells produced in tissue culture
- D. Vector DNA-site for tRNA synthesis

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**59.** Making two varieties of a cattle breed like red dance which have no common ancestors on either sides of their pedigree upto 4-6 generations is an example fo

A. inbreeding

B. crossbreeding

C. outcrossing

D. interspecific hybridisation



**60.** Which one of the following is used in the production of citric acid?

A. Aspergillus niger

B. Rhizopus arrhizus

C. Acefobacter

D. Saccharomyces cerevisiae

### Answer:



61. Ergotamine tartarate extracted from Claviceps is used for cure

of

A. bodyache

B. headache

C. fever

D. severe stomach pain

### Answer:

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**62.** The most abundant prokaryotes helpful to human in making curd from milk and in production of antibiotics are the ones categorised as

A. cyanobacteria

B. archaebacteria

C. chemosynthetic autotrophs

D. heterotrophic bacteria



**63.** Which one of the following is used as biological insecticide?

A. Tiger beetle

B. Caterpillar

C. Silkmoth

D. Majra poka

### Answer:

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64. An organism used as a biofertiliser for raising soyabean crop

production is

A. Azospirillum

B. Rhizobium

C. Nostoc

D. Azotobacter

Answer:

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65. Which vector can clone only a small fragment of DNA?

A. Bacterial artificial chromosome

B. Yeast artificial chromosome

C. Plasmid

D. Cosmid

**(D)** Watch Video Solution

66. In genetic engineering the antibiotics are used

A. as selectable markers

B. to select healthy vectors

C. as sequences from where replication starts

D. to keep the culture free infection

### Answer:



67. Commonly used vectors for human genome sequencing are

A. T-DNA

B. BAC and YAC

C. Expression vectors

D. 
$$T \, / \, Aclon \in g \stackrel{\longrightarrow}{\longrightarrow} rs$$

### Answer:

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**68.** Tobacco plants resistant to a nematode have been developed

by the introducing of DNA that produced (in the host cells)

A. both sense and antisense RNA

B. a particular hormone

C. an antioxidant

D. a toxic protein

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**69.** Silencing of mRNA has been used in producing transgenic plants resistant to:

A. boll worms

B. nematodes

C. white rusts

D. bacterial blights



**70.** Which one of the following bacterium is used for the production of transgenic plants?

A. Escherichia coli

B. Pseudomonas

C. Staphylococcus aureus

D. Agnobacterium tumefaciens

# Answer:



**71.** The carrying capacity of environment for a given population can be represented by the equation

A. 
$$dN=rN-rac{N}{K}$$

B. 
$$rac{dN}{dt} = rN - rac{N}{K}$$
  
C.  $rac{dN}{dt} = rN - rac{1}{K}$   
D.  $rac{dN}{dt} = rN igg[ 1 - rac{N}{K} igg]$ 



**72.** Which one of the following processes during decomposition is correctly described?

A. Fragmentation-Carried out by organisms such as earthworm

B. Humification-Leads to the accumulation of a dark coloured

substance humans, which resistant to microbial action at a

very fast rate

C. Catabolism-Last step in the decomposition under fully

anaerobic condition

D. Leaching - Water soluble inorganic nutrients rise to the top

layers of soil

### Answer:



73. Major ecological community of plants and animals extending

over large natural areas is known as:

A. bioregion

B. biosphere

C. biota

D. biome

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74. The biomass available for consumption by the herbivores and

the decomposers is called

A. net primary productivity

B. secondary productivity

C. standing crop

D. gross primary productivity



75. The organization which published the red list of species is

A. ICFRE

**B. IUCN** 

C. UNEP

D. WWF

# Answer:



**76.** Environment ProductionAct, to protect and improve the qualityofourenvironment air,water and soil was passed in the year

A. 1971

B. 1974

C. 1981

D. 1986

Answer:

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77. A drug obtained through genetic engineering and useful for

treating infertility is

A. calcitonin

B. chorionic gonadotropin

C. interleukin

D. tissue plasminogen activator

**78.** Which one of the following is not a bioindicator of water pollution

A. Stone flies

B. Blood worms

C. Sludge worms

D. Sewage fungus

# Answer:

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79. What is a genetic code?

A. GUG

B. AUG

C. AGG

D. UAA

Answer:

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80. Entero coelomate invertebrates belong to

A. Annelida

B. Echinodermata

C. Arthropoda

D. Mollusca

81. Menstruation is triggered by an abrupt decline in amount of a

hormone secreted by

A. Corpus luteum

B. Pituitary gland

C. Primary follicle

D. All of these

### Answer:

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82. The cranial nerve that is not related to movement of eyeball as

it does not innervate muscles attaching eyeball to orbit

A. Abducens

B. Trochlear

C. Optic

D. Oculomotor

Answer:

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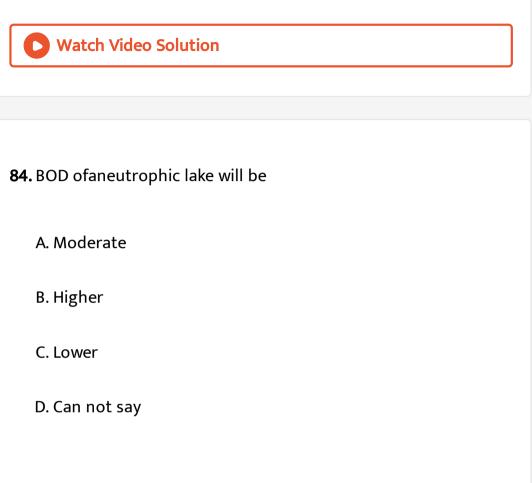
83. Out of 64 codons, 61 codons codes for 20 types of amino acids

A. Overlapping of genes

B. Universality of codons

C. Degeneracy of codons

D. Wobbling of codons





**85.** The blood group in which both antigens (A and B) present on both surface of RBC is

A. 0

B. A

С. В

D. AB

# Answer:

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86. Stele in flowering plantsis all tissues on the innerside of the

A. Pericycle

B. Endodermis

- C. Vascular cambium
- D. Cork cambium

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**87.** The site f perception of light/dark in the plants are

A. Shoot apices

- B. Flowering apices
- C. Leaves
- D. Meristems



88. The trophoblastic cells secrete

A. HCG

B. HPL

C. LH

D. Progesterone

# Answer:



89. Peripatus is a connecting link between :

A. Ctenophora and platyhelminthes

B. Mollusca and Echinodermata

C. Annelida and Arthropoda

D. Coelenterata and Porifera

#### Answer:



90. The first transgenic crop was

A. Wheat

B. Maize

C. Tobacco

D. Pea

**Answer:** 

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