This Question Paper contains 16 printed pages.
(Part - A & Part - B)

Sl.No. 0300030

056(E)

(MAY, 2021)
SCIENCE STREAM
(CLASS - XII)
(New Course)

Part - A : Time : 1 Hour / Marks : 50
Part - B : Time : 2 Hours / Marks : 50

પ્રશ્ન પેપરનો સેટ નંબર જેની સામેનું વર્તુળ OMR શીટમાં ઘટ્ટ કરવાનું રહે છે.
Set No. of Question Paper, circle against which is to be darken in OMR sheet.
03

(Part - A)

Time : 1 Hour] *[Maximum Marks : 50*

Instructions :

1) **There are 50 objective type (M.C.Q.) questions in Part - A and all questions are compulsory.**
2) **The questions are serially numbered from 1 to 50 and each carries 1 mark.**
3) **Read each question carefully, select proper alternative and answer in the O.M.R. sheet.**
4) **The OMR sheet is given for answering the questions. The answer of each question is represented by (A) O, (B) O, (C) O, (D) O. Darken the circle ● of the correct answer with ball-pen.**
5) **Rough work is to be done in the space provided for this purpose in the Test Booklet only.**
6) **Set No. of Question Paper printed on the upper-most right side of the Question Paper is to be written in the column provided in the OMR sheet.**

1) The correct equation of Verhulst - Pearl Logistic Growth is -

Rough Work

(A) $\frac{dN}{dt}=(d-b)\times N$

(B) $\frac{dN}{dt}=rN\left(\frac{K}{K-N}\right)$

(C) $\frac{dN}{dt}=rN\left(\frac{K-N}{K}\right)$

(D) $\frac{dN}{dt}=(b-d)\times N$

Rough Work

2) Where does the Brood Parasitism is observed?

(A) Fishes

(B) Birds

(C) Reptiles

(D) Amphibians

3) Which catfish is posing a threat to the indigenous catfishes in our rivers?

(A) American catfish

(B) Asian catfish

(C) African catfish

(D) Europian catfish

4) Amazon forest is estimated to produce, _____% of total oxygen in the earth's atmosphere through photosynthesis

(A) 10%

(B) 25%

(C) 40%

(D) 20%

5) Medicinal plant Rauwolfia vomitoria produce which chemical?

(A) Reserpine

(B) Serotonin

(C) Ethylene

(D) Dopamine

Rough Wo

6) _____ living organisms shows parthenogenesis.

(A) Cat

(B) Monkey

(C) Honey bee

(D) Human

7) Monera organisms have _____ plant body.

(A) $\frac{n}{2}$

(B) n

(C) $3n$

(D) $2n$

8) In which animal oestrus cycle is observed?

(A) Hen

(B) Birds

(C) Human

(D) Rat

9) In plants ovule is changed into which form?

(A) In endosperm

(B) In seed

(C) In embryo

(D) In fruit

10) _____ in pollen grains are long and ribbon like.

(A) Seagrasses

(B) Vallisneria

(C) Commelina

(D) Hibiscus

Rough Work

11) _____ Pollen grains causes allergy.

(A) Water hyacinth

(B) Common Pansy

(C) Oxalis

(D) Parthenium

12) After spermiogenesis, sperm head is embedded in _____.

(A) Sertoli cells

(B) Interstitial cells

(C) Leydig cells

(D) Corpus luteum

13) For normal fertility, at least _____ sperms must have normal shape and size and atleast _____ of them must show vigorous motility

(A) 50% and 50%

(B) 70% and 30%

(C) 40% and 60%

(D) 60% and 40%

14) _____ hormone is associated with parturition.

(A) F.S.H

(B) h.C.G

(C) Oxytocin

(D) L.T.H

Rough Work

15) In India 'family planning' programmes were initiated in _____.

(A) 1971
(B) 1951
(C) 1961
(D) 1941

16) In Periodic abstinence the couple should avoid from coitus from day _____ of the menstrual cycle.

(A) 11 to 18
(B) 10 to 17
(C) 3 to 9
(D) 12 to 19

17) _____ used to be very effective as emergency contraceptive.

(A) Progestogen - estrogen combination
(B) Vaults
(C) Condoms
(D) Natural methods

18) Chlamydiasis is _____ disease.

(A) MTP
(B) PID
(C) STIs
(D) IUDs

19) Transfer of an ovum collected from a donar into the fallopian tube is known as _____.

(A) ET
(B) AI
(C) ZIFT
(D) GIFT

Rough Wo

20) The alleles live together without showing any blending is known as _____.

(A) Co-dominance

(B) Law of Segregation

(C) Law of Dominance

(D) Chromosomal Theory

21) The genes responsible for skin colour shows what?

(A) Pleiotropy

(B) Linkage

(C) Polygenic inheritance

(D) Co-dominance

22) Mendel dihybrid ratio is _____.

(A) 1 : 3 : 3 : 9

(B) 3 : 9 : 1 : 3

(C) 9 : 3 : 3 : 1

(D) 6 : 3 : 3 : 4

23) 5-Methyl uracil is _____

(A) Thymine

(B) Cytosine

(C) Adenine

(D) Uracil

24) The length of DNA in E. Coli is _____.

(A) 1.34 mm

(B) 1.36 mm

(C) 1.8 m

(D) 2.2 m

Rough

25) The unequivocal proof that DNA is the genetic material is given by whom?

(A) Mathew Meselson and Franklin Stahl

(B) Watson and Crick

(C) Colin MacLeod and Maclyn-McCarty

(D) Alfred-Hershey and Martha Chase

26) In haploid content of human DNA _____ base pair is observed.

(A) 3.3×10^9

(B) 4.6×10^6

(C) 6.6×10^9

(D) 9.6×10^6

27) The coding sequences of genes is known as _____.

(A) Regulator

(B) Introns

(C) Promotor

(D) Exons

28) Pneumonia and common cold are _____ disease.

(A) Insect induced

(B) Food induced

(C) Air induced

(D) Water induced

29) _____ is the example of auto-immune disease.

(A) Rheumatoid Arthritis

(B) Malaria

(C) Cancer

(D) A I D S

Rough Work

30) After getting into the body of the person, HIV enters into _____.

(A) Neurons

(B) Epithalial cells

(C) Muscle cells

(D) Macrophages

31) _____ fish eats mosquito larvae.

(A) Silver Fish

(B) Paramelia

(C) Tiger Fish

(D) Gambusia

32) Which microbes are used for production of curd from milk?

(A) Stephalococcus bacteria

(B) Proponic bacterium

(C) Saccharomyces cerevisiae

(D) Lactic acid bacteria

33) Traditional drink 'Toddy' is made by Which plant?

(A) Mango

(B) Palms

(C) Coconuts

(D) Dates

34) The puffed-up appearance of idli and dosa's dough is due to production of which gas?

(A) H_2 gas

(B) N_2 gas

(C) CO_2 gas

(D) O_2 gas

Rough Work

35) Match the following and choose the correct option

A		B	
i)	Citric acid	P	Acetobacter aceti
ii)	Acetic acid	Q	Clostridium butylicum
iii)	Butyric acid	R	Lacto bacillus
iv)	Lactic acid	S	Aspergillus niger

(A) (i - P), (ii - Q), (iii - S), (iv - R)

(B) (i - R), (ii - Q), (iii - P), (iv - S)

(C) (i - Q), (ii - R), (iii - S), (iv - P)

(D) (i - S), (ii - P), (iii - Q), (iv - R)

36) Which bacteria are responsible for production of Biogas?

(A) Methanogens

(B) Acetobacter

(C) Lactobacillus

(D) Rhizobium

37) The useful insect to get rid of aphids is _____.

(A) Cockroach

(B) Dragon fly

(C) Lady bird

(D) House fly

38) Which first restriction endonuclease was isolated and characterised?

(A) Hind-I

(B) Hind-II

(C) Palindromase

(D) Ligase

Rough Work

39) The separated DNA fragments are stained by _____.

(A) Floridium bromide

(B) Ethidium chloride

(C) Ethidium bromide

(D) Lischmen blue

40) The procedure through which a piece of DNA is introduced into host bacterium.

(A) Translocation

(B) Translation

(C) Transcription

(D) Transformation

41) Agarose is extracted from _____.

(A) Sea weeds

(B) Fungi

(C) Bacteria

(D) Moss

42) Which process is useful in pest resistant plant?

(A) RNA interference

(B) Protein interference

(C) Enzyme interference

(D) DNA interference

43) Which peptide is not present in the mature insulin?

(A) Glycosidic bond

(B) A peptide

(C) C peptide

(D) B peptide

Rough Work

44) ELISA is based on which principle

(A) Polymerase Chain Reaction

(B) Gel Electrophoresis

(C) Recombinant DNA technology

(D) Antigen - antibody interaction

45) The human protein used for treatment of Emphysema

(A) β - 1 - trypsin

(B) α - 1 - antitrypsin

(C) β - 1 - antitrypsin

(D) α - 1 - trypsin

46) Which vitamin is more in Golden rice?

(A) Vitamin - A

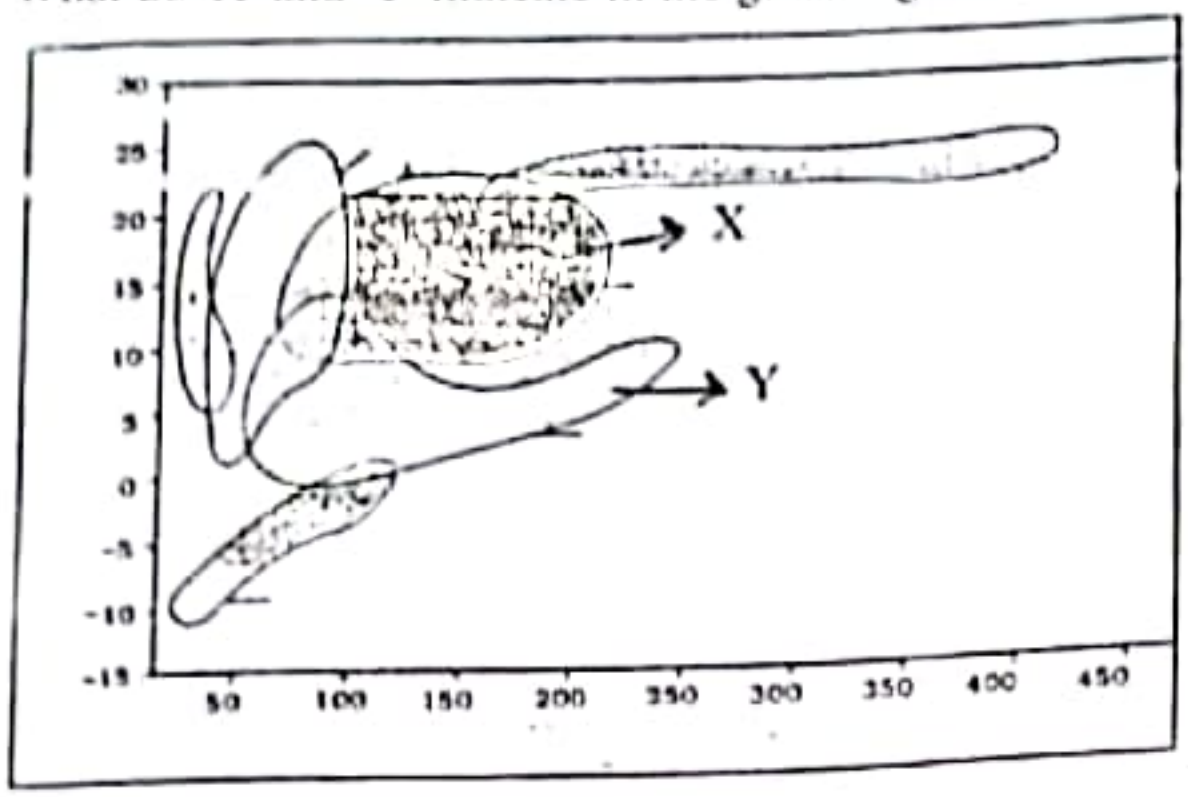
(B) Vitamin - K

(C) Vitamin - E

(D) Vitamin - B

Rough Work

47) What do 'X' and 'Y' indicate in the given figure?



(A) X = Coniferous Forest, Y = Grass land
(B) X = Tropical Forest, Y = Temperate Forest
(C) X = Temperate Forest, Y = Coniferous Forest
(D) X = Grass land, Y = Temperate Forest

48) Many freshwater animals cannot live for long in a sea water and vice versa because of _____
(A) Ultra Violet light related problem
(B) Osmotic problem
(C) Photo problem
(D) Thermal problem

49) Which special photosynthetic pathway is observed in many desert plants?
(A) C3 and C4 both pathway
(B) C3 pathway
(C) C4 pathway
(D) CAM pathway

50) Allen's Rule is applicable in which animals?
(A) Mammals from colder climates
(B) Mammals from high altitude
(C) Mammals from deep sea
(D) Mammals from desert

056(E)

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(Part - B)

Time : 2 Hours] *[Maximum Marks : 50*

Instructions :

1) **Write in a clear legible handwriting.**
2) **There are three sections in Part - B of the question paper and total 1 to 27 questions are there.**
3) **All the questions are compulsory. Internal options are given.**
4) **The numbers at right side represent the marks of the question.**
5) **Start new section on new page.**
6) **Maintain sequence.**

SECTION - A

■ **Answer any 8 questions from the following question No 1 to 12. Each question carry 2 marks.** **[16]**

1) Write in short - Zygote.
2) Explain any two types of pollination.
3) Write the barrier methods of family planning.
4) Explain - Pleiotropy.
5) Give any three salient features of the double - helix structure of DNA.
6) Write the structure of mammary gland. (diagram is not required)
7) Explain commensalism.
8) Write any two types of Biodiversity.
9) Explain disease pneumonia.
10) What criteria should be fulfill, so a molecule can act as a genetic material?
11) Uses of Microbes in household products (any two)
12) Explain Over-exploitation.

SECTION - B

■ **Answer any 6 questions from the following question No. 13 to 21. Each question carry 3 marks.** [18

13) Write any six main features of genetic code.

14) Explain Vaccination and Immunisation.

15) Role of microbes in production of biogas.

16) Explain - Gene therapy.

17) Describe the species - Area relations. (Diagram is must)

18) Explain any two ecologically relevant abiotic factors.

19) Explain a sexual reproduction with examples in animals.

20) Give the name and characters of the disease caused by Antamoeba histolytica, Trichophyton and wuchereria in human.

21) Explain separation and isolation of the Genetic material (DNA).

SECTION - C

■ **Answer any 4 questions from the following question No. 22 to 27. Each question carry 4 marks.** [1

22) Explain the process of spermatogenesis. (diagram is not required)

23) Explain the inheritance of one gene by Punnett square.

24) Write the experiment of Griffth's transforming principle.

25) Explain the amplification of Gene of interest using PCR. (diagram is must)

26) Describe the process of translation during protein synthesis.

27) Explain exponential growth.