This Question Paper contains 16 printed pages.
(Part - A & Part - B)
Sl.No.

056(E)

(MARCH, 2020)
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.
10

(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) _____ have the ability to transform normal cells into cancerous cells.
   (A) Rhinovirus
   (B) Bacteriophage
   (C) Retrovirus
   (D) T.M.V.

Rough Work

2) Which enzymes are responsible for breaking the wall of bacterial cell, plant cell and fungus cell respectively?
   (A) Lysozyme, Cellulase, Chitinase
   (B) Chitinase, Cellulase, Lysozyme
   (C) Cellulase, Chitinase, Lysozyme
   (D) Lysozyme, Chitinase, Cellulase

Rough Work

3) The formula of population density is

(A) $N_{t+1} = N_t + [(D + E) - (B + I)]$

(B) $N_{t+1} = N_t + [(B - I) - (D + E)]$

(C) $N_{t+1} = N_t + [(B + I) - (D + E)]$

(D) $N_{t+1} = N_t + [(B + I) - (D - E)]$

4) Eurythermal means _____.

(A) Some organisms are tolerant of a wide range of salinities

(B) Some organisms can tolerate and thrive in a wide range of temperatures

(C) Some organisms are restricted to a narrow range of salinities

(D) Some organisms can tolerate and thrive in a narrow range of temperatures

5) Cry I Ac and Cry I Ab encoded proteins _____ and _____ control respectively.

(A) Cotton boll worms - corn borer

(B) Lepidoptera - Coleoptera

(C) Corn borer - Cotton boll worms

(D) Coleoptera - Lepidoptera

6) Insulin chain A and Chain B are linked together by _____.

(A) Peptide bond

(B) Sulphur bond

(C) Disulfide bond

(D) Hydrogen bond

Rough Work

7) Rosie is the

(A) Transgenic Plant

(B) Transgenic Cow

(C) Transgenic Vaccine

(D) Transgenic disease controller

8) Organisms breed only once in their lifetime.

(A) Oysters

(B) Bamboo

(C) Desert lizard

(D) Kangaroo rat

9) Select the statement which explains best parasitism.

(A) Both the organisms are affected

(B) One organism is benefited, other is not affected

(C) Both the organisms are benefited

(D) One organism is benefited, other is affected

10) The annual net primary productivity of the whole biosphere is approximately _____ (dry weight) of organic matter.

(A) 170 billion tons

(B) 190 billion tons

(C) 150 billion tons

(D) 210 billion tons

11) The pyramid of biomass in sea is generally.

(A) Upright

(B) Linear

(C) Inverted

(D) Cyclic

Rough Work

12) $\log S = \log C + Z \log A$ equation indicate
(A) Species area relationships
(B) Loss of biodiversity
(C) Biodiversity
(D) Latitudinal gradient

13) The most important cause driving animals and plants to extinction is.
(A) Habitat loss and fragmentation
(B) Alien species invasions
(C) Over - exploitation
(D) Co-extinctions

14) In India now ____ National parks and _____ wild life sanctuaries.
(A) 75 - 348
(B) 110 - 548
(C) 90 - 448
(D) 90 - 248

15) _____ particulate size particles are responsible for causing the greatest harm to human health.
(A) PM 10
(B) PM 2.5
(C) PM 5
(D) PM 7

16) A sexual reproductive structure like gemmules are observed in _____.
(A) Penicillium
(B) Sponges
(C) Hydra
(D) Zoospora

Rough Work

17) In Honeybees the female gamete undergoes development to form new organisms without fertilization is known as

(A) Parthenogenesis

(B) Polyembryony

(C) Sexual reproduction

(D) Parthenocarpy

18) In primate mammals cyclical changes occur during reproduction are called

(A) Menopause

(B) Seasonal breeders

(C) Menstrual cycles

(D) Continuous breeders

19) Pollen grains are well preserved as fossils because of the presence of _____

(A) Cellulose

(B) Lignin

(C) Pectin

(D) Sporopollenin

20) A typical angiosperm embryo sac, at maturity, though _____ is _____

(A) 8 nucleate - 7 celled

(B) 6 nucleate - 7 celled

(C) 7 nucleate - 8 celled

(D) 7 nucleate - 6 celled

21) Some seeds such as black pepper and beet, remnants nucellus persist is known as :

(A) Perisperm

(B) Albuminous

(C) Non albuminous

(D) Pericarp

Rough Work

22) Testicular hormones like androgens are synthesized by
(A) Sertoli cells
(B) Spermatogonia
(C) Leydig cells
(D) Spermatozoa

23) Which hormone is involved in induction of parturition?
(A) Oxytocin
(B) Progesterone
(C) Relaxin
(D) Estrogen

24) Match the following and choose the correct option.

	Column - I		Column - II
i)	Salmonella typhi	p)	Malaria
ii)	Plasmodium	q)	Typhoid
iii)	Entamoeba histolytica	r)	Ringworm
iv)	Epidermophyton	s)	Amoebiasis

(A) (i - q), (ii - p), (iii - s), (iv - r)
(B) (i - q), (ii - r), (iii - s), (iv - p)
(C) (i - r), (ii - q), (iii - p), (iv - s)
(D) (i - p), (ii - q), (iii - r), (iv - s)

25) The early embryo (upto 8 blastomeres) can be transferred into the fallopian tube is known as
(A) ZIFT
(B) IUI
(C) IUT
(D) ICSI

Rough Work

26) Lactational amenorrhea means :

(A) Absence of menstruation during intense Lactation

(B) Corpus luteum degenerates

(C) Begins of menstruation

(D) Absence of Lactation

27) Diseases like chlamydiosis, trichomoniasis and syphilis are known as

(A) STI

(B) IUI

(C) MTP

(D) Non infectous diseases

28) Expression of only one of the parental characters in the F_1 and expression of both in the F_2, can be explained by

(A) Law of segregation

(B) Law of Dominance

(C) Punnett square

(D) Multiple alleles

29) _____ is mendelian disorder

(A) Turner's syndrome

(B) Klinefelter's syndrome

(C) Cystic fibrosis

(D) Down's syndrome

30) α Thalassemia and β Thalassemia linked genes are located on which chromosomes respectively

(A) on 16 and 11

(B) on 18 and 11

(C) on 11 and 16

(D) on 12 and 18

Rough Work

31) N - Glycosidic linkage contains

(A) Disaccharide

(B) Triglyceride

(C) Dipeptide

(D) Nucleoside

32) 5 - Methyl uracil means

(A) Thymine

(B) Guanine

(C) Uracil

(D) Cytosine

33) The Genome containing all the coding and non coding sequence with the function is termed as

(A) Expressed sequence Tags

(B) Bacterial artificial chromosomes

(C) Sequence Annotation

(D) Yeast artificial chromosomes

34) The bones of forelimbs have similar anatomical structure is _____

(A) Convergent evolution

(B) Peripheral evolution

(C) Divergent evolution

(D) Radial evolution

Rough Work

35) Diagrammatic representation of the operation of natural selection two peaks are formed. This condition shows _____ effect of

(A) Stabilising

(B) Disruptive

(C) Directional

(D) Distructive

36) The brain capacities of homoerectus was _____.

(A) 900 CC

(B) 650-800 CC

(C) 1400 CC

(D) 1200 CC

37) During evolution _____ evolved into first amphibians.

(A) Bony fish

(B) Reptiles

(C) Cartilagenous fish

(D) Lobe fins

38) Montreal Protocol _____ is for.

(A) Water pollution

(B) Soil pollution

(C) Air pollution

(D) Ozone depletion

Rough Work

39) Interferons are considered as _____ type of barrier.

(A) Physical

(B) Cellular

(C) Physiological

(D) Cytokine

40) Colostrum has abundant antibodies _____.

(A) Ig A

(B) Ig M

(C) Ig G

(D) Ig E

41) The cancer patients are given substances called biological response modifiers such as

(A) α - Interferon

(B) γ - Interferon

(C) β - Interferon

(D) Δ - Interferon

42) Rice variety containing over five times iron made possible due to _____.

(A) Biofortification

(B) Tissue culture

(C) Single cell protein

(D) Mutation

Rough Work

43) The capacity to generate a whole plant from any cell/explant is called

(A) Totipotency

(B) Somaclones

(C) Micropropagation

(D) Meristem

44) Superior males of one breed are mated with superior females of another breed is known as.

(A) Out - breeding

(B) Interspecific hybridization

(C) Cross-breeding

(D) MOET

45) 'Toddy' a traditional drink is made by fermenting sap from.

(A) Tomato

(B) Palms

(C) Soyabean

(D) Bamboo shoots

46) Bottled fruit juices brought from market are clearer as compared to those made at home because the bottled juices are clarified by the use of _____

(A) Pectinases

(B) Pectinases and Proteases

(C) Proteases

(D) Streptokinase

Rough Work

47) Many members of the genus _____ form mycorrhiza.

(A) Trichoderma

(B) Glomus

(C) Saccharomyces

(D) Monascus

48) Flocs means _____

(A) Activated sludge

(B) Masses of bacteria associated with fungal filaments to form mesh like structure

(C) Anaerobic sludge

(D) Primary sludge

49) The Lady bird and Dragonflies are useful to get rid of

(A) Aphids and rotifers

(B) Housefly and Mosquitoes

(C) Aphids and mosquitoes

(D) Cockroach and Locust

50) Fragments of DNA can be separated by a technique known as

(A) Selectable marker

(B) Biolistics

(C) Microinjection

(D) Gel electrophoresis

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 18 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 question No. 1 to 8 as directed. Each question carry 2 marks.** **[16]**

1) Explain cell division during gamete formation.

2) Explain the structure of pollen grain.

OR

Explain the types of natural birth control method.

3) Explain vaccination and immunisation.

4) Explain co-dominance in human with example.

5) Write the Biochemical characterisation of Transforming principle in human.

6) Explain population growth.

7) Write Carbon Cycle.

8) Explain the three important levels of biodiversity.

OR

Noise pollution and it's control.

SECTION - B

■ **Answer question No. 9 to 14 as directed. Each question carry 3 marks.** **[18]**

9) Give the important features of genetic code.

10) Explain Hardy-weinberg principle.

11) Explain innate immunity.

OR

Explain Plant breeding for improved food quality.

12) Explain Antibiotics.

13) Write the uses of G.M.O.

OR

Describe productivity as a unit of Ecosystem.

14) Describe any three causes of Biodiversity losses.

SECTION - C

■ **Answer question No. 15 to 18 in detail. Each question carry 4 marks.** **[16]**

15) Describe pregnancy and embryonic development.

16) What is point mutation? Describe it with example.

OR

Explain packaging of DNA Helix.

17) Describe Tissue culture.

18) Explain Restriction enzymes in detail. (Fig. is not necessary)