

This Question Paper contains 20 printed pages.

(Part - A & Part - B)

Sl.No.

056(E)

(MARCH, 2019)

SCIENCE STREAM

(CLASS - XII)

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.

09

(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) It is an example of animal who develop accessory respiratory organs to utilize atmospheric air when fresh water dries up.

- (A) Uromatrix
(B) Clarias
(C) Astacus
(D) Amoeba

Rough Work

- 2) If any population has equal birth-rate and death-rate then its age pyramid X, vital index Y and population is Z
- (A) X = Bell-shaped
Y = 100
Z = Stable
- (B) X = Triangular
Y = < 100
Z = Stable
- (C) X = Urn-Shaped
Y = > 100
Z = Declining
- (D) X = Triangular
Y = 0
Z = Growing
- 3) Which of the following is correct for decomposer?
- (A) Micro consumer, heterotrophs like bacteria
- (B) Micro consumers and release organic nutrients
- (C) Macro consumer, heterotrophs like fungi
- (D) Micro consumers and prime source of energy for all food chain
- 4) Select correct option for the "P" and "Q" in the given chart of a biological magnification of pesticides.
- | | | |
|-------------------|---|---------|
| Fish eating birds | → | "Q" |
| ↑ | | ↑ |
| Large fishes | → | "2ppm" |
| ↑ | | ↑ |
| Small fishes | → | "P" |
| ↑ | | ↑ |
| Zooplankton | → | 0.04ppm |
| ↑ | | ↑ |
| Water bodies | → | X |
- (A) P = 0.25 ppm, Q = 0.04 ppb
- (B) P = 0.5 ppm, Q = 25 ppm
- (C) P = 2.5 ppm, Q = 25 ppm
- (D) P = 0.04 ppb, Q = 2.5 ppm

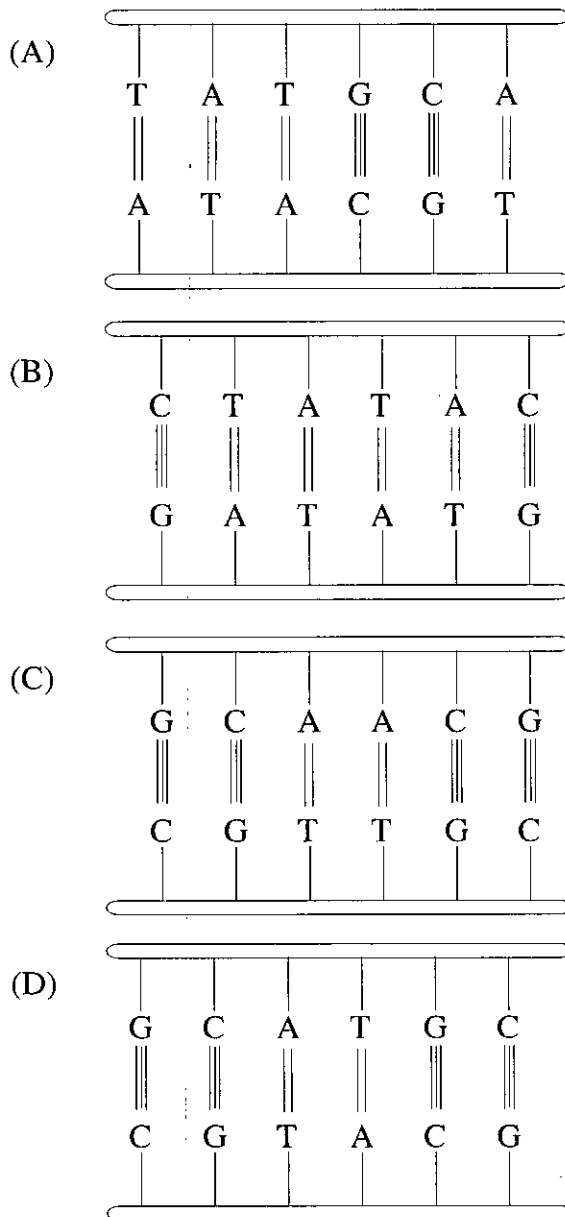
- 5) How many molecules of ozone can be decompose by 6 atom of chlorine?
- (A) 3,00,000
 (B) 6,00,000,000
 (C) 1,00,000
 (D) 6,00,000
- 6) What is correct for sympathetic nervous system?
- (A) Known as house-keeping system
 (B) Useful in emergency situation
 (C) Acetyl - choline is neurotransmitter
 (D) Preganglionic fibres are longer than post ganglionic fibres
- 7) Which option shows correctly matched pairs for Column - I and Column - II?

	Column - I		Column - II
P)	Planeria	i)	Fragmentation
Q)	Sycon	ii)	Fission
R)	Star-fish	iii)	Spore formation
S)	Plasmodium	iv)	Budding

- (A) (P - iv) (Q - ii) (R - i) (S - iii)
 (B) (P - i) (Q - iii) (R - ii) (S - iv)
 (C) (P - iv) (Q - i) (R - ii) (S - iii)
 (D) (P - ii) (Q - iv) (R - i) (S - iii)

- 8) Which is correct option for sertoli cells?
- (A) It provide nutrition to sperms
 - (B) It secrete testosterone
 - (C) It secrete semen
 - (D) It activate sperm
- 9) Select correct option for nucleic acid.
- (A) For transmission of genetic information DNA is better
 - (B) DNA can be mutatae, RNA can not be mutatae
 - (C) Both DNA and RNA can function as genetic material
 - (D) DNA can directly code for protein synthesis
- 10) Thorns of Bougainvillea and Tendril of cucurbita are homologous organs because of _____.
- (A) Similar function and different embryology
 - (B) Similar embryology and dissimilar functions
 - (C) Similar embryology and similar function
 - (D) Dissimilar embryology and dissimilar function
- 11) It is use for the entry of desired gene in Animal cells?
- (A) Retro virus
 - (B) HIV virus
 - (C) Rhizobium
 - (D) None

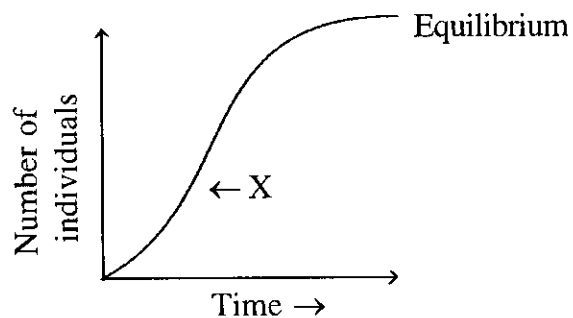
12) Which of the following is palindromic sequence of base pairs?



13) Milk produced by first transgenic cow "Rosie" is rich in protein _____

- (A) Alpha - Lactalbumin, 2.4 grams/litre
- (B) Beta - Lactalbumin, 2.4 milli grams/litre
- (C) Alpha - Lactalbumin, 2.4 milli grams/litre
- (D) Alpha - Histone, 2.4 grams/litre

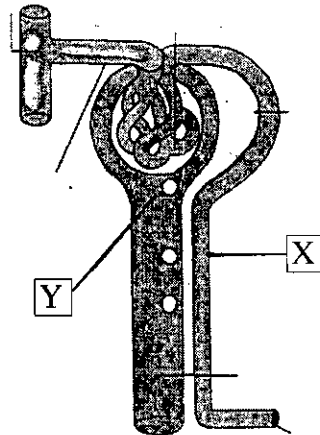
- 14) How many molecules of ATP are required for the synthesis of 5 molecules of glucose during calvin cycle?
 (A) 180 (B) 45
 (C) 90 (D) 05
- 15) Select correct option for the process of decomposition.
 a = Fragmentation
 b = Catabolism
 c = Leaching
 (A) $b \rightarrow c \rightarrow a$ (B) $a \rightarrow b \rightarrow c$
 (C) $c \rightarrow b \rightarrow a$ (D) $a \rightarrow c \rightarrow b$
- 16) What will the number of chromosome in haploid cells of potato?
 (A) 48 (B) 24
 (C) 12 (D) 06
- 17) During spermiogenesis, what is produce from distal centriole?
 (A) Proacrosomal granule
 (B) Acrosome
 (C) Axial filament
 (D) Vacuoles of Golgi complex
- 18) What does 'X' represent in the given diagram?



- (A) Logarithmic phase
 (B) Negative Acceleration
 (C) Positive Acceleration
 (D) Fluctuation in population

- 19) What is correct for the Net primary productivity?
- (A) $NPP = \text{Respiratory Loss} - GPP$
 - (B) $NPP = GPP + \text{Increase in Biomass}$
 - (C) $NPP = GPP + \text{Respiratory Loss}$
 - (D) $NPP = GPP - \text{Respiratory Loss}$
- 20) Full form of GMO is _____.
- (A) Genetically Modified Organ
 - (B) Genetically Modified Organism
 - (C) Genetically Made Organism
 - (D) Genetic Mode of Organism
- 21) In Mature Insulin A-chain contain X aminoacids, B-chain contain Y aminoacids and C- peptide is Z .
- (A) $X = 21$
 $Y = 30$
 $Z = \text{absent}$
 - (B) $X = 21$
 $Y = 30$
 $Z = \text{present}$
 - (C) $X = 30$
 $Y = 21$
 $Z = \text{absent}$
 - (D) $X = 30$
 $Y = 51$
 $Z = \text{present}$

- 29) In the given diagram of urine formation, Which process occurs in X and Y?



- (A) X = Tubular secretion
Y = Pressure filtration
- (B) X = Tubular reabsorption
Y = Tubular secretion
- (C) X = Tubular reabsorption
Y = Pressure filtration
- (D) X = Pressure filtration
Y = Tubular secretion
- 30) Inflammation of synovial membrane is main symptom of it.
- (A) Rheumatoid arthritis -
- (B) Gouty arthritis
- (C) Osteoarthritis
- (D) Osteoporosis

- 31) Which option shows correctly matched pairs for Column - I and Column - II ?

	Column - I		Column - II
i)	Amensalism	P)	Beneficial to one, detrimental to other.
ii)	Predation	Q)	Beneficial to both.
iii)	Commensalism	R)	Detrimental to one, unaffected for other.
iv)	Mutualism	S)	Beneficial to one, Neutral for other.

- (A) (i - R) (ii - P) (iii - Q) (iv - S)
 (B) (i - R) (ii - S) (iii - Q) (iv - P)
 (C) (i - P) (ii - R) (iii - Q) (iv - S)
 (D) (i - R) (ii - P) (iii - S) (iv - Q)
- 32) What is correct for CAM Plants?
 (A) An adaptation for hydrophytes
 (B) CO₂ at day time is released from inorganic acid
 (C) CO₂ absorbed at night and get converted into inorganic acid
 (D) Stomata remain open at night
- 33) Select the correct option for the given statements
 [Where a = Columbia, b = New York]
Statements :
 X = Number of birds species in "a" is higher than that in "b"
 Y = More solar energy is available in "b" than in "a"
 Z = Productivity in "a" is higher than in "b"
Options.
 (A) X and Y are correct and Z is wrong
 (B) X and Z are correct, Y is wrong and Z is correct explanation for X
 (C) X, Y and Z are correct and Y and Z are correct explanation for X
 (D) X and Z are wrong and Y is correct

- 34) It is known as "Terror of Bengal"
- (A) Eichhornia crassipes
 (B) Ocimum sanctum
 (C) Clarias gariepinus
 (D) Polyalthia longifolia
- 35) Individual "P" has difficulty in controlling visual reflexes and Individual "Q" has disorders associated with temperature and pain. Then, which part of brain is expected to be abnormal.
- (A) P = Inferior Colliculi
 Q = Middle Parietal lobe
 (B) P = Superior Colliculi
 Q = Inferior Colliculi
 (C) P = Superior Colliculi
 Q = Middle Parietal lobe
 (D) P = Occipital lobe
 Q = Middle Parietal lobe
- 36) Select option with correctly matched pairs for Column - I and Column - II.

	Column - I		Column - II
i)	Juxta glomerular cells	a)	Somatostatin
ii)	β -Cells of pancreas	b)	Glucagon
iii)	α -Cells of pancreas	c)	Erythropoietin
iv)	Delta Cells of pancreas	d)	Insulin

- (A) (i - b) (ii - c) (iii - a) (iv - d)
 (B) (i - a) (ii - d) (iii - b) (iv - c)
 (C) (i - a) (ii - b) (iii - d) (iv - c)
 (D) (i - c) (ii - d) (iii - b) (iv - a)

- 37) In the given diagram, which organ shows Vegetative reproduction?



- (A) Root (B) Leaf
(C) Stem (D) Axillary bud
- 38) Select correct option for the Embryo sac of angiosperm plants.
- (A) Three diploid (2n) antipodals are present at chalazal end
(B) It has centrally located triploid secondary nucleus
(C) Endosperm tissue is produced before fertilization
(D) Egg apparatus with two haploid synergids and one haploid egg cells
- 39) It remove genetic dwarfism
- (A) Cytokinins (B) Auxins
(C) Gibberellins (D) ABA
- 40) Embryo after first 8 weeks development is called _____.
- (A) Morula (B) Blastocyst
(C) Foetus (D) Corpus Luteum
- 41) In hormonal contraceptive method pills are given orally for, _____ consecutive days beginning on the 5th day of the menstrual cycle.
- (A) 21 (B) 7
(C) 5 (D) 14

42) Select correct option for the given statements.

Statements.

X = Father is colour blind

Y = His daughter can be colour blind or carrier for colour blindness

Options.

(A) X is correct and Y is wrong

(B) X and Y both are wrong

(C) Y is correct and X is wrong

(D) X and Y both are correct

43) Only genetic code with the dual function is _____.

(A) CCC

(B) AUG

(C) UAG

(D) UGG

44) Which theory states, "life arises from pre existing organisms"?

(A) Theory of Eternity

(B) Meteorit Theory

(C) Theory of Catastrophism

(D) Biogenesis

45) amp^R Gene has recognition site for _____.

(A) Pst I

(B) Bam HI

(C) Hind III

(D) Sal I

46) Select correct option for the toxin produced by *Bacillus thuringiensis*.

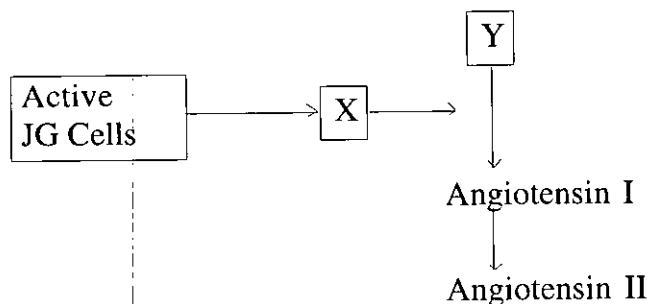
(A) It makes mid gut cell impermeable

(B) It is produce in its active form

(C) Active toxin is crystallized form

(D) Active form of it get bind to mid-gut epithelial cells

- 47) The concentration of Macronutrients in dry weight/gram is _____.
- (A) More than 100 mg (B) 0.1 to 1 mg
(C) 1 to 10 mg (D) 20 to 40 mg
- 48) Who stated that green substance(chlorophyll) located in special organelle (chloroplast) of plant cell produces glucose?
- (A) Ingenhouz (B) Cornelius Niel
(C) Julius Von Sachs (D) Black - Man
- 49) What does "X" and "Y" indicate in the given chart?



- (A) X - Renin
Y - Aldosteron
- (B) X - Erythropoietin
Y - Angiotensinogen
- (C) X - Vasopressin
Y - Angiotensin
- (D) X - Renin
Y - Angiotensinogen
- 50) Select correct option for the given statements in reference to muscle contraction.

Statements.

X = Actin slide over myosin

Y = Light meromyosin join with actin

Z = Myosin and Actin actually do not contract

Options.

- (A) X, Y and Z three are correct
(B) X and Y are Wrong, Z is correct
(C) X and Z are correct and Y is wrong
(D) X and Y are correct and Z is wrong

056(E)
(MARCH, 2019)
SCIENCE STREAM
(CLASS - XII).

(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 Photoperiodism and discuss it in Xanthium and Cucumis.
- 2) Write chromosomal disorder in Down's syndrome and write any three symptoms of it.
- 3) Write any four points of differences between cyclic and non-cyclic photophosphorylation.
- 4) "Biodiversity conservation is today's prime requirements", Explain it with suitable example of food chain.
- 5) Explain culmination of pregnancy in human.

OR

Explain structure of wall of uterus.

- 6) Discuss Statement : The nature of nitrogenous waste and their excretion depends on availability of water. Explain it using any two examples.

OR

Discuss Statement : Counter current mechanism in Vasa recta helps in maintaining concentration gradient in renal medulla.

- 7) Write comparative note on hind limb and fore limb of human.
- 8) Describe Causative agent of Genital herpes and write symptoms of Genital herpes. (any three)

SECTION - B

- Answer question number 9 to 14 as directed. Each question carry 3 marks.

[18]

- 9) Describe hormones of Adrenal Cortex.
- 10) Describe regulation of respiration in human.
- 11) Explain Transpiration pull theory.
- 12) Draw labelled diagram of internal ear and explain mechanism of hearing.
- 13) Explain Central dogma concept with chart.

OR

Write any six salient features of HGP.

- 14) Discuss the basic structure of alimentary canal wall and explain differences found in various regions of alimentary canal.

SECTION - C

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

- 15) Explain all the phases of blood clotting mechanism in reference with extrinsic path-way.
- 16) Discuss role of chromosomes other than sex-chromosome in the determination of sex.

OR

"Complete linkage is rare" explain it with suitable example.

- 17) Draw cyclic chart of Kreb cycle and explain its reactions from pyruvic acid up to 5-carbon containing acid formation.
- 18) Explain embryonic development in angiosperm plants. Draw labelled diagram of heart shaped Embryo.

