

This Question Paper contains 20 printed pages.
(Part - A & Part - B)

Sl.No.

056 (E)

(MARCH/APRIL, 2015)

Part - A : Time : 1 Hour / Marks : 50

Part - B : Time : 2 Hours / Marks : 50

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Set No. of
Question Paper:

09

(Part - A)

Time : 1 Hour]

[Maximum Marks : 50

Instructions :

- 1) There are 50 Multiple Choice Questions (M.C.Q.) 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) 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 O.M.R. sheet.
- 6) Rough work is to be done in the space provided for this purpose in the Test Booklet only.

- 1) If Smilax = stipules then passion flower = _____ .

- (A) Leaflets
(B) Leaf apex
(C) Axillary buds
(D) Apical buds

Rough Work

- 2) In monocotyledon, what is the structure formed by the union of pericarp and seed coat called?


- (A) Hull
(B) Aleurone layer
(C) Epithelial layer
(D) Scutellum

Rough Work

- 3) In which type of inflorescence, the development of inflorescence axis is arrested?
- (A) Capitulum
 - (B) Racemose
 - (C) Umbel
 - (D) Cymose
- 4) If the component members have their one margin overlapped by the other margin of another component and the other margin overlapping the margin of another component then this aestivation is called -----?
- (A) Valvate
 - (B) Twisted
 - (C) Imbricate
 - (D) Quincuncial
- 5) Gymnospermic plants possess ----- and -----?
- (A) Albuminous cells, Sieve cells
 - (B) Sieve tube, Companion cells
 - (C) Companion cells, Phloem fibers
 - (D) Companion cells, Sieve cells
- 6) In which type of vascular bundle the phloem occurs radially on both the side of xylem on the same radius?
- (A) Conjoint
 - (B) Concentric
 - (C) Bicollateral
 - (D) Radial

- 7) Which option match Column - I and Column - II correctly?

Rough Work

Column - I Symbols		Column - II Names	
X	BrI	a	Perianth
Y		b	Bracteolate
Z	(*)	c	Bisexual flower
W	P	d	Staminodes

- (A) (X - a) (Y - b) (Z - c) (W - d)
- (B) (X - b) (Y - c) (Z - d) (W - a)
- (C) (X - c) (Y - d) (Z - b) (W - a)
- (D) (X - b) (Y - a) (Z - d) (W - c)
- 8) State the family having five sepals, gamosepalous, tubular, valvate and persistent Calyx.
- (A) Fabaceae
- (B) Liliaceae
- (C) Solanaceae
- (D) None of the given

- 9) Which is the correct option to match Column - I and Column - II correctly?

Rough Work

Column - I		Column - II	
P	Parenchyma	X	Flexibility
Q	Collenchyma	Y	Mechanical strength
R	Sclerenchyma	Z	Storage and Secretion

	P	Q	R
(A)	Y	Z	X
(B)	Z	X	Y
(C)	X	Y	Z
(D)	Z	Y	X

- 10) Which of the following take part in formation of periderm -----.

- (A) Phellogen, Stomata, Phellem
- (B) Phellogen, Phellem, Phelloderm
- (C) Phelloderm, Stomata, Phellem
- (D) Only Phellogen, Phellem

- 11) Phyllotaxy in Red Oleander and Alstonia is of ----- type.

- (A) Opposite decussate
- (B) Whorled
- (C) Alternate
- (D) Opposite Superimposed

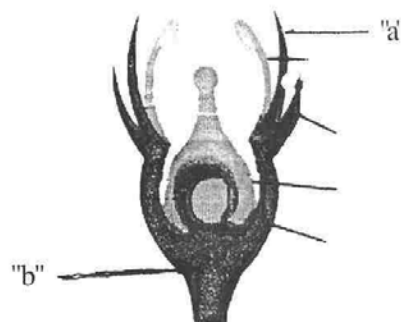
Rough Work

- 12) Which of the following option is correct regarding statement 'X' and 'Y'?

Statement 'X' - In Quisqualis stem pair of leaves on successive nodes are arranged overlapping one another, the phyllotaxy is called opposite decussate.

Statement 'Y' - In mustard stem single leaf arises from a node, the phyllotaxy is called alternate.

- (A) Statement 'X' is right and 'Y' is wrong
 (B) Statement 'X' and Statement 'Y' both are right
 (C) Statement 'X' is wrong and 'Y' is right
 (D) Statement 'X' and 'Y' both are wrong
- 13) Which of the following option indicates correct labelling for 'a' and 'b' in given diagram?



- (A) a - Thalamus, b - Stamen
 (B) a - Petal, b - Thalamus
 (C) a - Sepal, b - Petal
 (D) a - Petal, b - Ovary
- 14) In flowers having Vexillary Corolla, Keel means -----.
- (A) Two lateral Petals
 (B) The largest petal on Posterior side
 (C) Two smallest anterior petals
 (D) Two lateral smallest petals

Rough Work

- 15) Ebr, \oplus , \bigcirc , $K_{(5)}$, $\overline{C_{(5)}}$, A_5 , $\underline{G_{(2)}}$ is the floral formula of -----.
- (A) Piludi (B) Karanja
(C) Sunhemp (D) Tulip
- 16) In dicot root, next to endodermis few layers of Parenchyma cells are present which -----.
- (A) Forms the pith
(B) Shows thickening of suberin and lignin
(C) Produces lateral roots
(D) Is impermeable to water
- 17) In autumn & winter cambium produces -----.
- (A) duramen (B) laburnum
(C) early wood (D) late wood
- 18) Which of the following inorganic salt of lime is not impregnated in matrix of bone?
- (A) Magnesium phosphate
(B) Magnesium fluoride
(C) Calcium phosphate
(D) Calcium fluoride
- 19) Which of the following option is correct regarding statement 'X' and Statement 'Y'?
- Statement 'X' - Sinus venosus opens into right auricle
Statement 'Y' - Deoxygenated blood from left auricle and oxygenated blood from right auricle is mixed in ventricle
- (A) Statement 'X' and 'Y' both are wrong
(B) Statement 'X' and 'Y' both are right
(C) Statement 'X' is right and 'Y' is wrong
(D) Statement 'X' is wrong and 'Y' is right

Rough Work

20) The segments of walking leg of cockroach in correct sequence are -----.

- (A) Trochanter, coxa, tibia, femur, tarsus
- (B) Tarsus, trochanter, femur, tibia, coxa
- (C) Coxa, femur, trochanter, tibia, tarsus
- (D) Coxa, trochanter, femur, tibia, tarsus

21) The systematic position of Indian frog is -----.

- (A) Chordata, Amphibia, Vertebrata, Gnathostomata, Anura, Rana, Tigrina
- (B) Chordata, Vertebrata, Gnathostomata, Amphibia, Rana, Asculanta
- (C) Chordata, Vertebrata, Gnathostomata, Amphibia, Anura, Rana, Tigrina
- (D) Gnathostomata, Vertebrata, Chordata, Rana, Tigrina

22) Match the secretions in Column - I with their functions in Column - II.

Column - I		Column - II	
A.	Enterogastrine	1.	Stimulates intestine to secrete intestinal juice
B.	Cholecystokinin	2.	Contracts gall bladder & releases Bile juice
C.	Pancreozymin	3.	Reaches stomach & stop secretion of gastric juice
D.	Enterocrinin	4.	Stimulates pancreas to secrete pancreatic juice

- (A) A-3, B-2, C-4, D-1
- (B) A-3, B-1, C-2, D-4
- (C) A-2, B-3, C-1, D-4
- (D) A-1, B-4, C-2, D-3

Rough Work

- 23) Which of the following is the correct statement for spermatheca of earth-worm?
- (A) They are located in 5th, 6th, 7th and 8th segments and they receives sperms from Companion animal during copulation
 - (B) They are located in 6th, 7th, 8th and 9th segments and their secretion helps in Cocoon formation
 - (C) They are present in 6th, 7th, 8th and 9th segments and they receives sperms from Companion animal during Copulation
 - (D) They open to the exterior by a pair of small aperture between 5/6, 6/7, 7/8 and 8/9, segments in centre
- 24) Thin filament of voluntary muscle is composed of -----.
- (A) Myosin
 - (B) Only actin
 - (C) Elastin
 - (D) Actin, tropomysin, troponin
- 25) No. of cranial nerves and spinal nerves found in frog are respectively -----.
- (A) 9 pairs and 10 pairs
 - (B) 10 pairs and 9 pairs
 - (C) 10 pairs and 10 pairs
 - (D) 10 pairs and 11 pairs
- 26) ----- remains closed during bucco-pharyngeal respiration in frog.
- (A) External nares
 - (B) Eustachian aperture
 - (C) Internal nares
 - (D) Gullet

Rough Work

27) From given below examples select the Multiperous Polychasial Cyme.

- (A) Calotropis
- (B) Jasmine
- (C) Crinum
- (D) Hibiscus

28) Match Column - I and II and select the correct answer.

Column - I		Column - II	
P	Pea	t	Phyllode
Q	Muchlenbeckia	u	Assimilatory roots
R	Tinospora	v	Folliaceous stipules
S	Hibiscus	w	Phylloclades

	P	Q	R	S
(A)	w	v	t	u
(B)	v	w	u	t
(C)	v	w	t	u
(D)	u	w	t	v

29) It is an example of Cypsela fruit.

- (A) Vernonia
- (B) Mango
- (C) Holoptela
- (D) Narvelia

30) What is the economic importance of Fabaceae?

- (A) Dyes and Fibres
- (B) Spices
- (C) Ornamental
- (D) All of the given

Rough Work

- 31) It is not the character of sclereids.
- (A) Spherical and Oval
 - (B) Narrow lumen
 - (C) Spherical and Round
 - (D) Short cylindrical thickened with suberin
- 32) Select the function of root having tissue consist of polygonal, thick-walled cells, which are arranged in many layers?
- (A) Absorption of moisture
 - (B) Respiration
 - (C) Climbing
 - (D) Mechanical Support
- 33) Which type of cartilage is seen on head of humerus in frog?
- (A) Yellow elastic cartilage
 - (B) White fibro cartilage
 - (C) Hyaline cartilage
 - (D) Calcified cartilage
- 34) Select the tissue having cells, arranged in single layer, but appear multi-layered.
- (A) Pseudo stratified epithelium
 - (B) Squamous epithelium
 - (C) Stratified epithelium
 - (D) Transitional epithelium

Rough Work

- 35) Select the main constituents of setae.
- (A) Chitin (B) Calcium carbonate
(C) Calcium oxalate (D) Cuticle
- 36) Select the name of cells, which forms the epidermis of body wall of earthworm.
- (A) Circular muscles
(B) Cuticle
(C) Albumin secreting oblong cells
(D) Parietal layer
- 37) What is function of typhlosole?
- (A) Secretion of enzymes for carbohydrate digestion
(B) To break complex substances in intestine
(C) Neutralization of humic acid
(D) Increase in absorption area of intestine
- 38) Give the name of hormone which regulate the blood glucose level.
- (A) Only Insuline
(B) Only Glucagone
(C) Glucagone and Insuline
(D) Thyroxine

Rough Work

- 39) Give the function of Buccal cavity of Frog.
- (A) Digestion of Food
 - (B) Absorption of Food
 - (C) Ingestion of Food
 - (D) Storage of Food
- 40) What is not found in faeces of Frog?
- (A) Bile pigments
 - (B) Debris epithelial cells
 - (C) Leucocytes
 - (D) Enterokinase
- 41) Give the another name of Internal ear.
- (A) Membranous labyrinth
 - (B) Tympanic membrane
 - (C) Semi circular canal
 - (D) None of the given
- 42) Give the function of Root in Rhizophora.
- (A) Respiration
 - (B) Absorption of the moisture
 - (C) Mechanical support
 - (D) Photosynthesis
- 43) Which type of fertilization and embryonic development take place in frog?
- (A) Internal fertilization and internal embryonic development
 - (B) Internal fertilization and external embryonic development
 - (C) External fertilization and internal embryonic development
 - (D) External fertilization and external embryonic development

Rough Work

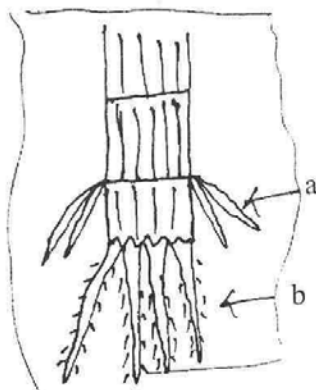
44) What is formed by the union of TWO Systemic arch?

- (A) External cartoid
- (B) Truncus arterious
- (C) Dorsal aorta
- (D) Lateral aorta

45) Which types of roots are developed in Cuscuta?

- (A) Sucker Roots
- (B) Respiratory Roots
- (C) Roots for the moisture absorbtion
- (D) Clinsing Roots

46) In the given diagram what is correct for the name of region labelled as "a" and "b"?



- (A) a = Stilt root, b = Prop root
- (B) a = Normal root, b = Adventitious root
- (C) a = Stilt root, b = Fibrous root
- (D) a = Fibrous root, b = Stilt root

- 47) For the Statement p and q which of the following option is correct? **Rough Work**

Statements:

p – Blood is liquid connective tissue

q – Matrix of blood is not secreted by blood cells

- (A) Statement q is correct and statement p is wrong
 (B) Statement p is correct and statement q is wrong
 (C) Both statement p and q are wrong
 (D) Both statement p and q are correct
- 48) What is the proportion of erythrocytes in one cubic millilitre blood of an adult male in human?
 (A) 4,10,000 to 6,00,000 (B) 41,000 to 60,000
 (C) 4,100 to 6,000 (D) 41,00,000 to 60,00,000
- 49) Give the function of the part present at the junction of mid gut and hind gut of cockroach.
 (A) Digestion of food (B) Excretion
 (C) Production of debris (D) Absorption of food
- 50) Match Column - I and Column - II and select the correct answer:

Column - I		Column - II	
P	Septal nephridia	X	In segment 4-5-6
Q	Integumentary nephridia	Y	From segment 15 to the last segment
R	Pharyngeal nephridia	Z	From segment 3 rd to all

- (A) (P – Y) (Q – Z) (R – X)
 (B) (P – Z) (Q – X) (R – Y)
 (C) (P – X) (Q – Y) (R – Z)
 (D) (P – X) (Q – Z) (R – Y)

056 (E)

(MARCH/APRIL, 2015)

(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 numbers 1 to 8 as directed, Each question carry 2 marks. [16]

- 1) Describe modification of Adventitious fibrous roots for the storage of food.
[Diagram is not required].

- 2) Distinguish (Give four points):
Aerial stem - Under ground stem.
- 3) Describe unipinnate compound leaf and bipinnate compound leaf with diagram.

- 4) Describe salient features of upper and lower epidermis of isolateral leaf.

OR

Describe only ground tissue system of the bilateral leaf.

- 5) Write any four functions of connective tissue.

- 6) Write the composition of blood plasma.

OR

Describe the types of granulocytes.

- 7) Describe the muscle tissue, which is immune to fatigue.

- 8) Describe head of the cockroach.

SECTION - B

- Answer question numbers 9 to 14 as directed, Each question carry 3 marks. [18]

- 9) Describe the inner - most whorl of typical flower, with diagram.

OR

Describe Gynoecium of liliaceae family and draw floral diagram for liliaceae.

10) Describe dicotyledonous seed with diagram.

11) Describe nervous system of earth - worm [Diagram is not required].

12) Describe the structure of frog eye with diagram.

OR

Describe external structure of frog heart and draw labelled diagram of dorsal view of frog heart.

13) Describe vascular bundle of stem having parallel venation, with diagram.

14) Describe types of meristematic tissue.

SECTION - C

■ Answer question numbers 15 to 18 in detail as directed. Each question carry 4 marks. [16]

15) What is branching? Explain the types of branching with diagram and examples.

- 16) Describe open bucco-pharyngeal cavity of female frog with diagram.

OR

Draw diagram of female urinogenital system of frog and answer the following questions.

- 1) Functions of fat-body.
- 2) Location of Ovary.

- 17) Describe voluntary muscles.

[Diagram is not required].

- 18) Describe male reproductive system of cockroach with diagram.

