D.A.V PUBLIC SCHOOL, BEHROR
Holidays Homework XII (2025-26)

English:-

1. Anita/Amit of Civil lines ,kanpur, decides to apply for the job of a Sales Manager in a reputed export house.Write and application along with your resume in about 120- 150 words to the Personal Manager, Dezine Furniture Exports,Kanpur.

2. Fast paced life,changing work culture and family structure have left the elderly very vulnerable, neglected,lonely and distressed. Write an article in about 120-150 words describing the problem and suggesting old age homes as a solution to it.You are Prateek/Prateeka.

3. Recently your school organised "The Toppers Day" to honour the meritorious students and the students who excelled in sports and other co-curricular activities. Write a report of the event for your school magazine in about 150 words.

4. Your school is going to organise a Blood Donation Camp . As a Head boy/girl of your school write a notice about the same.

5. Briefly describe the incident in which Douglas was ducked into the swimming pool. How did it affect him?

6. "I screamed but only the water heard me." Why did Douglas scream ?What does he mean by "but only the water hear me"?

7. Lost childhood means lost hopes, lost dreams a lost generation and the beginning of a poor society. Do you agree? Give reasons and support of your answer.

8. Edla symbolises the values of kindness and compassion what values are symbolised by the parallel the cropton and the iron master respectively support your answer with evidence from the story.

9. The bangle makers are embroidered in an endless spiral. What is this spiral ? Why is it endless?

10. What values of Douglas help them overcome his fear of water? Do you think the same values can help you manage your own fears ,if any ?Why/Why not.

11. Make a project file on the poem of "Aunt Jennifer 's Tiger ".

MATHS :-

1. Find the area of the triangle whose vertices are (1,0) , (6,0) and (4,- 3).
2. If A=$\begin{bmatrix} 1 & 1 & -2 \\ 2 & 1 & -3 \\ 5 & 4 & -9 \end{bmatrix}$, find $|A|$.
3. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, $show\ that\ A^2 - 5\,A + 7\,I = 0\,.Hence\ find\ A^{-1}$.
4. Write the function $\tan^{-1}\left[\frac{\sqrt{1+x^2}}{x}\right]$ $x \neq 0\ in\ the\ simplest\ form$

5. Let $A = \begin{bmatrix} 3 & 7 \\ 2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 8 \\ 7 & 9 \end{bmatrix}$, then prove that $(AB)^{-1} = B^{-1}A^{-1}$.
6. Solve system of linear equations, using matrix method :

   x-y+2z=7 , 3x+4y-5z=-5 ,2x-y+3z=12
7. Solve system of linear equations by using matrix method:

   3x-2y+3z=8 , 2x+y-z=1 , 4x-3y+2z=4

8. Find $\frac{dy}{dx}$, if y=x^{sinx}+$(sinx)^{cosx}$.

9. Prove that:$\tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right)=\frac{\pi}{4}-\frac{1}{2}\cos^{-1}x$
10. Find the values of $\tan^{-1}\sqrt{3} - \cot^{-1}(-1/\sqrt{3})$?
11. Find the value of K so that the given function is continuous at the given indicated point
12. Find the value of K if $f(x) = \begin{cases} Kx^2, & x \leq 2 \\ 3, & x > 2 \end{cases}$ is continuous at x=2.
13. A ballon which is remain spherical has a variable radius. Find the rate at which its volume is increasing with the radius is 15 cm.?
14. If y = $\sqrt{sinx + \sqrt{\sin x + \sqrt{\sin x + \cdots . \infty}}}$ then find $\frac{dy}{dx}$
15. Express the following matrix as the sum of a symmetric and a skew- symmetric matrix;

$$\begin{bmatrix} 1 & 3 & 5 \\ -6 & 8 & 3 \\ -4 & 6 & 5 \end{bmatrix}$$

Physics:-

1. An electric dipole is held in uniform electric field. (i) Using suitable diagram, show that it does not undergo any translatory motion. (ii) Define torque, giving its SI unit; derive an expression for the torque acting on this dipole.

2. An electric dipole consists of two charges of magnitude 1 c. They are placed 3 cm apart in a uniform electric field of 100 N C-1 acting at right angles to the axis of dipole. Calculate i) dipole moment of electric dipole ii) electric force acting on either charge iii) torque acting on dipole.

3. A point charge causes an electric flux of -1.0 X 103 Nm2/C to pass through a spherical Gaussian surface of 10cm radius centered on the charge. a.) If the radius of the Gaussian surface were doubled, how much flux would pass through the surface? B.) What is the value of the point charge?

4. Define electric field intensity. Write its S I unit. Write the magnitude and direction of electric field intensity due to an electric dipole of length 2a at the midpoint of the line joining the two charges.

5. Calculate the electric flux through a spherical surface of radius 10 cm enclosing a negative charge of 8.854 µC. What happens to the flux when the radius of the surface is doubled?

6. In a parallel plate capacitor with air between the plates, each plate has an area of 6X 10 -3 m2 and the separation between the plates is 3mm. Calculate the capacitance of the capacitor. If this capacitor is connected to 100V supply, what would be the charge on each plate? How would charge on the plates

change if a dielectric of thickness 3mmof K=6 is inserted between the plates while the voltage supply remains connected?

7. If a dielectric slab is introduced between the plates of a parallel plate capacitor after the battery is disconnected. How do the following quantities change? (i) Charge (ii) Potential difference (iii) Capacitance (iv) Energy.

8. A capacitor of unknown capacitance is connected across a battery of V volt. The charge stored in it is 360μC. When the potential across the capacitor is reduced by 120V, the charge stored in it becomes120 μC. Calculate V and the unknown capacitance C. What will be the charge stored in the capacitor if the applied voltage is increased by 120V?

9. A capacitor of 200 pF is charged by a 300 V battery. The battery is then disconnected and the charged capacitor is connected to another uncharged capacitor of 100 pF. Calculate the difference between the final energy stored in the combined system and the initial energy stored in the single capacitor.

10. To what potential must an insulated sphere of radius 10cm be charged so that the surface density of charge is equal to 1 μCm-2?

11.Explain the term 'drift velocity' of electrons in a conductor. Hence obtain the expression for the current through a conductor in terms of drift velocity.

12. Describe briefly, with the help of a circuit diagram, how a potentiometer is used to determine the internal resistance of a cell.

13. In a potentiometer arrangement for determining the emf of a cell, the balance point of the cell in open circuit is 350cm. When a resistance of 9Ω is used in the external circuit of the cell, the balance point shifts to 300cm. Determine the internal resistance of the cell.

14. Two cells of E.M.F. 10 V and 2 V and internal resistances 10 Ω and 5 Ω respectively, are connected in parallel as shown. Find the effective voltage across R

15. .The storage battery of a car has an emf of 12V. If the internal resistance of the battery is 0.4 Ω, What is the maximum current that can be drawn from the battery?

Chemistry :-

1.chapter- Haloalkane and haloarene-

All exercises question+ intext question (practice in your hw notebook)

PYQ of chapter Haloalkane and haloarene-

2.chapter - alcohol , phenol , ether

All exercises question+ intext question

PYQ of chapter alcohol , phenol and ether (2015 to 2025)

I.P.

1. Write any ten program of python series and dataframe.
2. Write about any twenty stream of computer science in which humans are doing their job with their salary.
3. Write any ten functions of python program and describe their uses.
4. Write the uses of brackets in python program.
5. Write about different types of SQL functions in detail.

BIOLOGY

CH-2 REPRODUCTION IN FLOWERING PLANTS

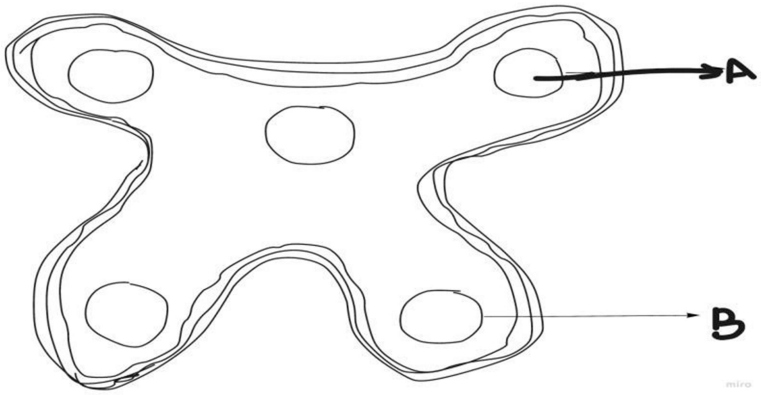
Q 1The function of tapetum in microsporangium is.

a) It nourishes the developing pollen grains. b) It performs the function of protection.

c) It helps in dehiscence of anther to release pollen grains.

d) It undergoes meiotic divisions to form microspore tetrads.

Q 2 Identify 'A' and 'B' in the given diagram of a transverse section of a young anther.



a) A- Tapetum, B- Sporogenous tissue b) A- Sporogenous tissue, B- Tapetum

c) A-Connective, B- Epidermis d) A- Endothecium, B-Tapetum Q 3 The egg apparatus in the embryo sac consists of

a) Two synergids and one egg cell b) One synergid and two egg cells

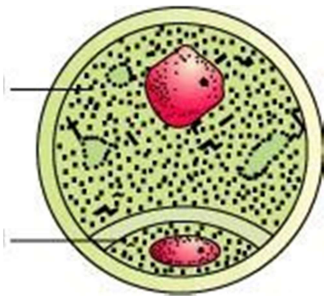
c) Central cell d) Only two egg cells

Q 4. Which of the following statements is true for a filiform apparatus?

a) It is located at the chalazal end. b) It is located at the micropylar end.

c) They play an important role in guiding the pollen tubes into the synergid. d) Both (b) and (c)

Q 5. Identify 'A' and 'B' in the following diagram of a mature pollen grain.



a) A- Generative cell B- Vegetative cell b) A- Vegetative cell B- Generative cell

c) A- Nacuole B- Nucellus d) A- Nucleus B- Vacuole Q 6 Match the terms in column I with the items in column II.

(1) Autogamy A)Transfer of pollen grains from anther to stigma of the same flower

(2) Geitonogamy (B)Transfer of pollen grains from anther to stigma of flower of another plant of similar type.

(3) Xenogamy (C)transfer of pollen grains from the anther to the stigma of another flower of the same plant

a) 1-A, 2-C,3-B b) 1-A, 2-B,3-C c) 1-C, 2-B, 3-A d) 1-B,2-A, 3-C

Q 7 Which of the following statements is correct about the majority of angiosperms?

a) Egg has five antipodal cells b) Reduction division occurs in the megaspore mother cells.

c) A small central cell is present in the embryo sac d) Egg has filiform apparatus

Q 8. A bilobed dithecous anther has 500 microspore mother cells per microsporangium. How many male gametophytes can this anther produce?

a) 10,000 b) 25,000 c) 20,000 d) 8,000

Q 9. Choose the incorrect statement.

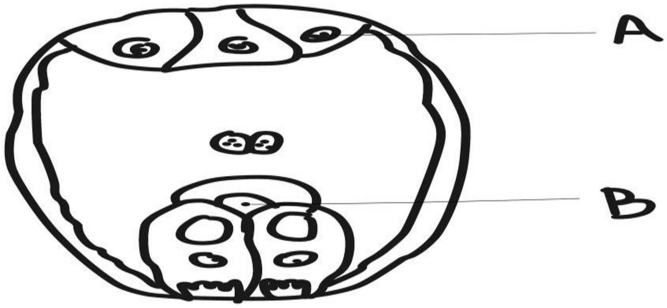
a) The hollow foliar structure that encloses the leaf primordia in a grass embryo is called coleoptile

b) In apple, the thalamus also contributes to fruit formation and becomes edible.

c) In Zostera, the pollen grains are long and ribbon-like and released inside the water.

d) Sepals and petals are concealed in entomophilous flowers

Q 10. Study the diagram given below and choose the correct option against 'A' and'B'



a) Ovule; A-Egg; B-Polar body b) Embryo sac; A-Antipodals; B-Egg

c) Anther; A-Endothecium; B-Connective d) Stigma; A-Central cell; B-Antipodals Q 11. Assertion: There are a few species of plants in which fruits develop without fertilisation

Reason: Parthenocarpic fruits are seedless

Q 12.Assertion: In apomixis plants of new genetic variations are not produced. Reason: In apomixis, reductional division takes place.

Q 13. Assertion: Megaspore mother cell undergoes meiosis to produce four haploid megaspores.

Reason: Female gametophyte is produced from a single megaspore.

Q 14. Assertion: The pollen grain represents male gametophyte. Reason: Pollen grains are shed at four celled stage.

Q 15. Assertion: Exine is made up of sporopollenin.

Reason: Pollen grains are well preserved as fossils.

Q 16. Assertion: As the seed matures, its water content is reduced and seeds become relatively dry (10-15% moisture by mass)

Q 17. Reason: Micropyle facilitates the entry of oxygen and water into the seed during germination.

Q 18 Assertion: Chasmogamous flowers produce assured seed set. Reason: Chasmogamous flowers do not open at all.

Q 19. Read the following and answer any four questions from 31(i) to 31(v): Apomixis is a mode of reproduction which does not involve formation of zygote through gametic fusion. It is therefore akin to asexual reproduction. In plants apomixis commonly mimics sexual reproduction but produces seeds without fertilisation. Eg. some species of Asteraceae and grasses. Apomixis can be introduced in hybrid varieties. Scientists are busy in identifying genes for apomixis so that they can be introduced in hybrid varieties.

i) In many laboratories, active research is on to comprehend the genetics of apomixis as;
a) Apomixis generates genetically different individuals
b) Apomixis is the method to produce seeds without fertilisation
c) Hybrid plants are directly formed by apomixis
d) Transfer of apomictic genes into hybrid varieties that shall prevent hybrid vigour loss over the years

ii) Apomixis is a form of
a) Vernalisation b) Parthenogenesis c) Parthenocarpy d) None of the above

iii) In plants, apomixis pertains to plant development
a) From root cuttings b) From cuttings of stem
c) Without gametic fusion d) Fusion of gametes

iv) Assertion: In apomixis plants of new genetic sequence are produced. Reason: In apomixis, two individuals of the same genetic sequence meet.

Q 20. Read the following and answer any four questions from 32(i) to 32(v) given below:
The endosperm makes the main source of food for the embryo. Generally, the endosperm nucleus divides after the division of the zygote, but in several cases the endosperm is formed to a great extent even before the first division of the zygote. There are three general types of endosperm formation:(a) nuclear type (b) cellular type and (c) helobial type. The endosperm is usually triploid but haploid endosperm is also found. Endosperm may either be completely consumed by the developing embryo before seed maturation or it may persist in mature seed.

i) One of the following is an example of seed with persistent endosperm
a) Pea b) Groundnut c) Gram d) castor
ii) Significance of endosperm development that precedes embryo formation
a) To nourish the growing embryo b) To enhance seed development.
c) To nourish the ovule developing into a seed. d) To provide nutrition to the embryo sac.
iii) If the endosperm of a dicot plant contains 30 chromosomes, find the number of chromosomes present in the root cells of the plant
a) 40 b) 10 c) 20 d) 15
iv) The endosperm nucleus is
a) Tetraploid b) Triploid c) Diploid d) Haploid
v) Assertion: Nuclear endosperm is formed by subsequent nuclear division without wall formation.
Reason: Tender coconut water is an example of such an endosperm where the endosperm remains nuclear throughout the development of the fruit.
a) Both assertion and reason are true and the reason is the correct explanation of assertion.
b) Both assertion and reason are true but the reason is not the correct explanation of assertion.
c) Assertion is true but reason is false
d) Both assertion and reason are false

REVISION WORK SHEET-2
SUB – BIOLOGY
HUMAN REPRODUCTION

Q 1. The region outside seminiferous tubule is called interstitial space which contains all except
a. immunologically active cells b. blood vessels c. sertoli cells d. leydig cells
Q 2. Decline of which hormone during menstrual cycle results in the degeneration of corpus luteum
a. Progesterone b. estrogen c. both 1 and 2 d. LH Q 3. For normal fertility in males
a. atleast 60% sperms should have normal shape and size and atleast 40% should show vigorous motility*

b. 40% sperms should be normal shape and size and vigorous motility
c. 60% sperms with normal and shape and size and remaining 40% with high motility
d. 40% with normal shape and size and 60%with high motility Q 4. Which pituitary hormone regulates sertoli cells

a. estrogen b. progestrone c. FSH* d. LH

Q 5. Which one of the following hormones is responsible for uterine contractions during parturition?

a. relaxin b. vasopressin c. oxytocin d. prolactin Q 6. In human foetus the limbs and digits develop after:

a. 8 weeks b. first trimester c. 5th month d. 12 weeks

Q 7. Foetal ejection reflex in human female induces

a. release of hormones from placenta b. growth and development of ovarian follicles
c. release of oxytocin from maternal pituitary d. release of prolactin from pituitory Q 8..

Which of the following dipictss the correct pathway for transport of sperms?

a. rete testes epididymis vasdeferens vasa efferentia
b. rete testes vasdeferens vasa efferentia epididymis
c. rete testes vasa efferentia epididymis vas deferens
d. rete testes vas deferens epididymis vasa efferentia

Q 9. . Which of the following statements are correct regarding menstrual cycle?

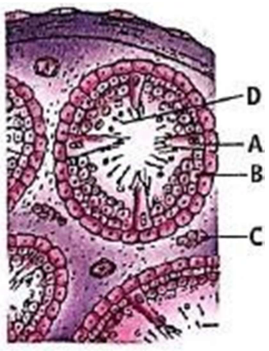
a. LH induces rupturing of graffian follicle
b. proliferative phase is characterized by increased production secretion of progesterone
c. corpus luteum secretes large amount of estrogen
d. both FSH and LH attain peak level at secretory phase Q 10. Match the columns and find the correct option

	I	II
A	Proliferative phase	i. Break down of endometrial lining
B	Secretary phase	ii. Follicular phase
C	menstruation	iii. Luteal phase

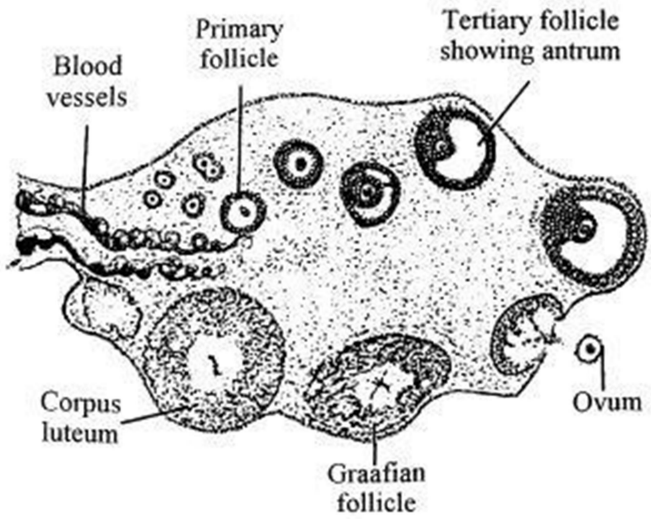
a. A-ii, B –iii, C-I b. A-I, B-iii C-ii c . A-iii, B-ii. C-I d. A-iii, B-I, C- ii

Q 11. Given below diagram refers to the T. S. of testis showing somniferous tubules. A,B,C,and D in the above figure represent

a. A-Sertoli cells, B-Secondary spermatocytes C-interstitial cells D-sperms
b. A- interstitial cells B-Spermatogonia C- Sertoli cells D-Sperms
c. A-Sertoli cells B-spermatozoa C-- interstitial cells D-Sperms
d. A-Sertoli cells B- Spermatogonia C- interstitial cells D-Sperms



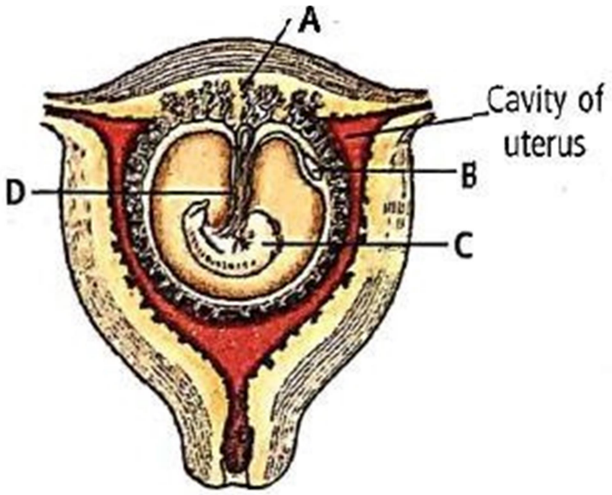
Q 12. Identify the wrongly labeled part



a. primary follicle b. ovum c. graffian follicle d. corpus luteum Q 13. Urethral meatus refers to the

a. urinogenital duct b. opening of vas deferens into urethra

c. external opening of urinogenital duct d. muscles surrounding urinogenital duct Q 14. In the given diagram find out A, B , C and D



	A	B	C	D
a.	umbilical cord	placental villi	yolk sac	embryo
b.	yolk sac	umbilical cord	embryo	placental villi
c.	placental villi	yolk sac	embryo	umbilical cord
d.	placental villi	embryo	yolk sac	umbilical cord

A human female has maximum number of primary oocytes in her ovaries

a. at birth b. just prior to puberty c. early fertile years d. middle age of fertile years Q 15. Hormones secreted by placenta to maintain pregnancy are

a. hCG, hPL , progestogen, prolactin b. hCG , progestogen, oestrogen, glucocorticoids

c. hCG , hPL , progestogen, oestrogen d. hCG ,hPL , oestrogen, relaxin, oxytocin Q 16. Read the following statements.

I. Each testes has 25 compartments called testicular lobules.

II. Each testicular lobule contains one to three highly coiled seminiferous tubules in which sperms are produced.

III. Sertoli cells provide nutrition to testicles IV. Sertoli cells are activated by FSH Which of above statements are incorrect?

a. I and II b. only I c. II and IV d. III and IV

Q 17. Assertion: Menstruation only occurs if the released ovum is not fertilized Reason: Lack of menstruation may be indicative of pregnancy.

Q 18. Assertion: Menstrual phase is followed by luteal phase

Reason: During follicular phase the pituitary hormones gradually increase Q 19.

Assertion: The embryo at 8 to 16 blastomeres is called morula

Reason: The morula continuously divides to transform into trophoblast

Q 20. In mammals, the first part of oogenesis starts in the germinal epithelium, which gives rise to the development of ovarian follicles, the functional unit of ovary. Oogenesis consists of several sub processes: oocytogenesis ootido genesis, and finally maturation to form an ovum Folliculogenesis is a separate sub process
that accompanies all three oogenetic sub processes .

i. Which cell division is involved in the formation of secondary oocyte?

a. Mitosis b. Meiosis I c. Amitosis d. Meiosis II

ii. Number of chromosomes in first polar body of humans

a. 23 b. 46 c. 21 d. 1

iii. At fetal life which of the following female germ cells are found

a. oocytes b. primary oocyte c. oogonia d. secondary oocytes

iv. At puberty only –number of primary follicles are left in each ovary

a. 10,000-25000 b. 20000 -30000 c. 60,000 -80,000 d. 8,000-10,000

v. Assertion: In human beings ovum is released from ovary at ootid stage

Reason: The secondary oocyte divides into unequal daughter cells, a large ootid and a small polar body

(1) A moss plant is unable to complete its life cycle in a dry environment. State two reasons.

(2) With which type of reproduction do we associate the reduction division? Analyse the reasons for it.

(3) In an experiment, Mr. John dissected a large potato tubes into several small pieces & then placed each piece in a separate pot for germination. After few days, he observed that a few pieces germinated & developed new-plants. The others did not germinate at all. Give possible reasons.

(4) a) What is common between vegetative reproduction & apomixis.

b) Name the organisms in which external fertilization takes place.

(5) One day, Ramesh was standing in the kitchen with his mother who was cutting onions for making vegetables. He observed that in some of onion bulbs, green leaves appeared on upper end & roots on the lower end. In the evening, he shared his observations and discussed with his father, a Botany teacher. His father explained that in case of onion, new plants develop through asexual reproduction.

Read the above passage and answer the following questions:-

i) What is the name of this type of Propagation?

ii) Can this method be used for raising onion plants at home also?

iii) Name some other vegetables which are propagated by using bulbs.

iv) What value is displayed by Ramesh's father?

<u>Chapter 2- Sexual Reproduction in Flowering Plants</u>

(1) Name the pollinating agent of flowers like salvia, sunflower. Give two favorable features of such a flower for pollination.

(2) Give characteristics of insect pollinated flowers.

(3) Name the pollinating agents of flowers like maize and wheat. Give any two characteristic features of such a flower.

(4) An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Give any one

reason.

(5) Name the following structures

a) Single colytedon of the monocotyledonous embryo of grass family.

b) The portion of embryonal axis above the level of cotyledons in dicot embryo.

c) Occurrence of more than one embryo in a seed.

d) Seedless fruits produced without fertilization.

(6) Is it possible to store pollen grains? What do we call the process of pollination using pollen grains of desired plant?

(7) Do you think that microspores & pollen grains are the same structures? If they are different then what is the basic difference between them.

(8) Each pollen grain produces two male gametes. How many pollen grains will be required to fertilize 4 ovules present in a particular carpel? Give reasons.

(9) A flower of tomato plant, following the process of sexual reproduction, produces 200 viable seeds.

Answer the following question giving reasons:-

a) What would have been the minimum no. of ovules present in per- pollinated pistil?

b) How many microspore mother cells would minimally be required to produce requisite number of pollen grains?

c) How many pollen grains must have minimally pollinated the carpel?

d) How many male gametes would have used to produce these 200 viable seeds?

e) How many megaspore mother cells were required in this process?