DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 7

Topic :- Plant Growth & Development

1 **(d)**
Common examples of plants requiring vernalisation are winter rye, winter wheat, winter barley, pea, beet, cabbage, henbane, viola, clover, *Chrysanthenum*, etc.

2 **(b)**
Ethylene causes acceleration of fruit ripening in tomato and maleic hydrazine (an auxin) delays sprouting of potato tubers. Ethylene promotes the female flowers in cucumbers. Amylase production is the function of GA

3 **(a)**
Primary Growth results due to
(i) Elongation of plant along the axis is called the primary growth
(ii) Primary growth happens due to the presence of root apical meristem and shoot apical meristem.
Root Apical Meristem (RAM), Shoot Apical Meristem (SAM) and intercalary meristem are responsible for the primary growth to the plants and they principally contributes to the elongation of the plants along their axis. In the dicotyledons and gymnosperms, the lateral meristems, vascular cambium and cork cambium appear later in life. These are the meristems that causes increase in the girth of the organ in which they are active. This is known as the secondary growth of the plant

4 **(a)**
Plant growth is unique as they retain the capacity for unlimited growth which is mainly due to the presence of meristems. The cells of such meristems have the capacity to divide and self-perpetuate. This form of growth wherein new cells are always being added to the plant body by the activity of the meristem is called the open form of growth

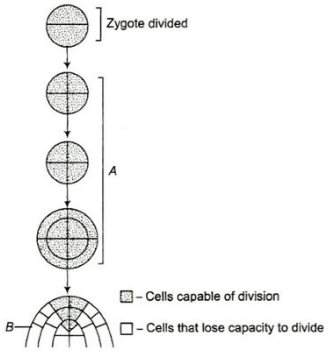
5 **(c)**
ABA is produced in many parts of green plants. Its presence is suspicious in lower plants (bryophytes and pteridophytes).
ABA is formed by melvonic acid pathway, not by glycolysis

6 **(d)**
Natural cytokinin was first obtained from corn kernels and coconut milk

7 **(d)**
Sleep movement is also known as **nastic response**, this occurs daily in the response to some stimulus, *i.e.,* day, night (dark), temperature. pH, turgor pressure, etc.

8 **(a)**
Synthetic auxins or auxin derivatives such as 2, 4-D; 2, 4, 5-T, dicamba, dinitrophenol, dalapan, etc, are used as weedicides/herbicides that kill weeds and unwanted plants in agriculture/horticulture.

9 **(d)**



Stages during embryo development showing geometric and arithmetic phase of growth during development

10 **(b)**

Pruning help in making the hedge dense as it frees the axillary buds from apical dominance. In fact, the apices of the plant axis (*e.g.,* shoot apex) has the highest concentration of auxin, which suppresses the axillary buds, while promotes the growth of apical bud. When the shoot apex is cut down through prunning, the axillary buds and the hedge becomes dense.

11 **(d)**

Effects of Ethylene
(i) Horizontal growth of seedling
(ii) Swelling of axis
(iii) Apical hook formation in dicot seedling
(iv) Promotes senescence and abscission of plants
(v) Break seed and bud dormancy
(vi) Initiate flowering in pineapple and flowering in mango
Apical dominance is the effect of auxin hormone

12 **(b)**

Root initiation in callus is the function of **auxin**. **Cytokinins** delay the senescence of leaves and other organs and also induce shoot formation.

13 **(a)**

Firstly, a Russian Physiologist Dimitry N Nelijubow who established ethylene's triple response on pea seedling. *These triple responses are*
(a) inhibited stem elongation
(b) increased stem thickening
(c) horizontal growth habit

14 **(d)**

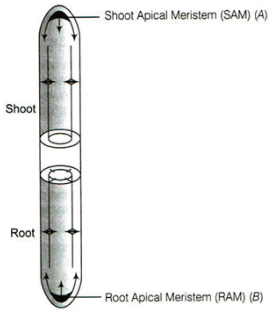
Abscisic acid is a naturally occurring growth inhibitor. It acts as a 'stress hormone'. It causes abscission of leaves and promotes senescence. It initiates flowering only in certain short day plants.

15 **(c)**

LDP (Long Day Plant) These plants show flowering when they receive long photoperiod, above the critical photoperiod. *e.g*., henbane, wheat, oat, beet, spinach, raddish, lettuce, etc.

SDP (Short Day Plant) These is plants show flowering when the photoperiod, or length below the critical period. Most of winter plants are SDP, *e.g.,* potato, bean, tobacco, rice, sugar cane etc.
DNP (Day Natural Plant) These plants can blossom thoughout the year. *e.g.*, tomato, maize, cotton, pepper, etc.

16 **(b)**



Diagrammatic representation of locations of root apical meristem, shoot apical meristem and vascular cambium. Arrows exhibit the direction of growth of cells and organ.
Vascular cambium ⇒ Responsible for secondary growth (increases girth)
Shoot and root apical ⇒ Responsible for primary growth
meristem (increases height)

17 **(c)**
Cytokinins(zeatin) are essential for opening of stomata, while abscisic acid takes part in closing of stomata.

18 **(c)**
Ethylene is a simple gaseous hydrocarbon and is naturally occurring plant hormone. It induces artifical ripening of fruits.

19 **(c)**
When apical meristem is removed, the cytokinin level of lateral bud is increased. This increase at the base of bud stimulates cell division and completes vascular connection between axillary bud and transport system.

20 **(a)**
A – Hypocotyl
B – Cotyledons
C – Seed coat
D – Epicotyle hook

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**D**	**B**	**A**	**A**	**C**	**D**	**D**	**A**	**D**	**B**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**D**	**B**	**A**	**D**	**C**	**B**	**C**	**C**	**C**	**A**