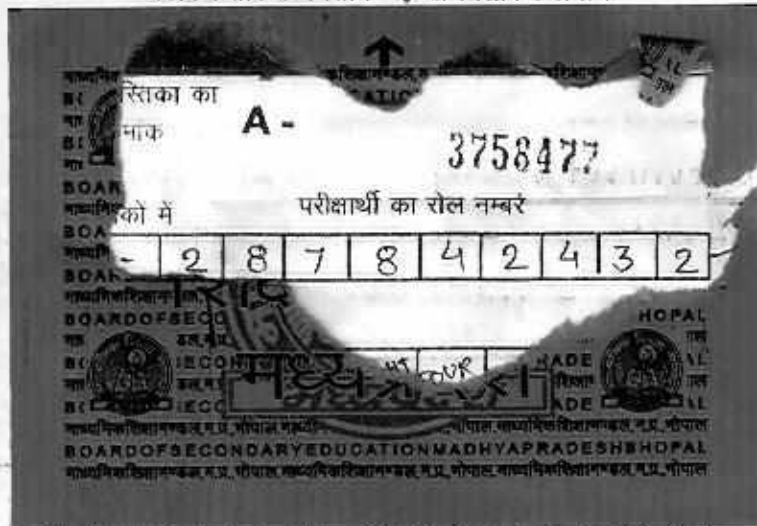




परीक्षार्थी द्वारा भरा जावे ↓

परीक्षा का विषय **Biology** विषय कोड **2 3 1** परीक्षा का माध्यम **English**

स्टीकर तीर के निशान ↓ से मिलाकर लगायें



एक एक दो चार तीन चार पांच छ आठ

क - दूरक उत्तर पुस्तिकाओं की संख्या अंकों में **X** शब्दों में **1**ख - परीक्षार्थी का कक्ष क्रमांक **11**ग - परीक्षा का दिनांक **17 03 2018**परीक्षा का नाम एवं परीक्षा केन्द्र क्रमांक की मुद्रा
हायर सेकेण्डरी सर्टिफिकेट परीक्षा 2018**केन्द्र क्रमांक-782167**

परीक्षक का नाम एवं हस्ताक्षर

शंकर लाल शर्मा
17/3/2018

केन्द्राध्यक्ष/सहायक केन्द्राध्यक्ष के हस्ताक्षर

विवेक ज्योति शर्मा सेकेण्डरी
स्कुल लाल शर्मा

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे ↓

पता धित किया जाता है कि मूल्यांकन के समय दूरक उत्तर पुस्तिकाओं की संख्या उपरोक्तानुसार सही पाई होले काप्ट स्टीकर अतिप्रस्त नहीं पाया गया तथा अन्दर के पृष्ठों के अनुरूप मुख्य पृष्ठ पर अंकों की प्रविष्टि एवं अंकों का योग सही है।

निर्धारित मुद्रा : नाम, पदनाम, मोबाईल नम्बर, परीक्षक क्रमांक एवं पदांकित संख्या के नाम की मुद्रा लगाएं।

उप मुख्य परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा : परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा

A. S. SURJAN
01.10.486

2017084

केवल परीक्षक द्वारा भरा जावे।
प्रश्न क्रमांक के सम्मुख प्राप्तांकों की प्रविष्टि करें।

प्रश्न क्रमांक	पृष्ठ क्रमांक	प्राप्तांक (अंकों में)
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Answer of Ques - 01

(1) Peristaltic movement

(2) Potometer

(3) Garner and allard

(4) Symbiosis

(5) Changes

Answer of Ques - 02

(1) Zero and Zero

(2) Heart

(3) Absciscic acid

(4) Straight

(5) AIDS

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Answer of Ques - 03.

(1) "Mg" (Magnesium)

(2) "Stapes"

(3) "Sandal"

(4) "Zea mays"

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(5) Zero population growth → "When Natality and Mortality become equal then such state is called Zero population growth" i.e.,

Number of Person taking birth = Number of Person dying.

Answer of Ques - 04.

(a) PAN - Secondary Pollutant.

(b) Vitamin K - Blood clotting.

(c) Acromegaly - Growth Hormone.

(d) Decomposers - Actinomycetes.

(e) Interferons - Antigerm Substance.

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Answer of Ques - 05

Ans (5) When cells of muscle do anaerobic respiration in order to produce energy, then lactic acid is formed and due to accumulation of lactic acid, muscle fatigue occurs and it is unable to respond against any stimuli.

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Answer of Ques - 06

Ans (6) Endosperm - "Endosperm is a triploid ($3n$) cell formed during double fertilization in angiosperm plants. It provides the nourishment to the developing embryo."

1st polar body (n) + 2nd Polar body (n) $\rightarrow$ Secondary nucleus ($2n$)

Secondary nucleus ($2n$) + Male gamete (n) $\rightarrow$ Endosperm ($3n$)

Thus, "Endosperm is formed by fusion of Secondary nucleus and Male gamete inside ovule".

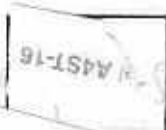
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Answer of Ques no- 07.

Test Tube baby - "When a mother is unable to conceive, then its ovum and the sperm of her husband is fertilised in a test tube under in-vitro condition and aseptic condition. It develop to form embryo upto 8 - 16 celled then it is implanted into the mother's uterus, then developed baby is called Test tube baby."

Answer of Ques no- 08

Biological oxygen demand - It is the (amount) volume of oxygen required for the Biological oxidation of organic substances in unit volume of water is called Biological oxidation demand.

Its value for pure water is "One".

It is used to measure the purity of water in water bodies.

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Answer of Ques no - 09.

Defination

- (i) Guttation :- "Loss of water in the form of water droplets through the pore present in margin of leaves, Hydathode is called. Guttation"

This occurs generally during morning and evening and. Its water contain some or dissolved salt. in it.

- (ii) Plasmolysis :- "When a living cell is kept in hypertonic solution. then shrinkage of its protoplasm. is called plasmolysis". It occurs only in living cell. and so maximum osmotic pressure of cell can be determined through it.

- (iii) Diffusion-Pressure deficit (DPD) - "The difference in the pressure diffusion pressure of pure water and its solution is called diffusion Pressure Deficit". It is absorbing capacity of solution.

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Relation between DPD & OP & TP is

$$DPD = OP - TP.$$

Answer of Ques no - 10.

Differences between fermentation and anaerobic-Respiration, are -

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Fermentation

Anaerobic Respiration.

(1) It is an extra-cellular process

(1) It is an intracellular process.

(2) It occurs in liquid & medium outside the cell.

(2) It occurs in cytoplasm.

(3) It requires microorganism.

(3) It does not require micro-organism.

Energy is not produced.

(4) Energy is produced & stored in the form of ATP.

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Answer of Ques - 11

(i) Population Density:- "It is the total number of organism of a population present in unit area, is called Population density."

unit area (m^2) is used for terrestrial organism,

Unit Volume (m^3) is used for aquatic organism.

Population density = $\frac{\text{Number of Members}}{\text{Population}} \div \text{Area}$.

(ii) Sex Ratio - "It is equal to the number of female person present per thousand male is called Sex Ratio."

Sex Ratio = $\frac{\text{Number of female}}{1000 \text{ Male person}}$.

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Ques 11 Death Rate - "It is the number of Person dying in one year per 1000 person is called. death Rate or Mortality".

$$\text{Death Rate} = \frac{\text{Number of Person dying} \times 1000}{\text{Population in mid year.}}$$

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Answer of Ques no. - 12.

Following are the significance of tissue culture. -

(1) Production of Rare species :- With the help of tissue culture, those species are in the verge of extinction can be conserved, and some medicinal plants, which are now very rare, can be conserved from this method.

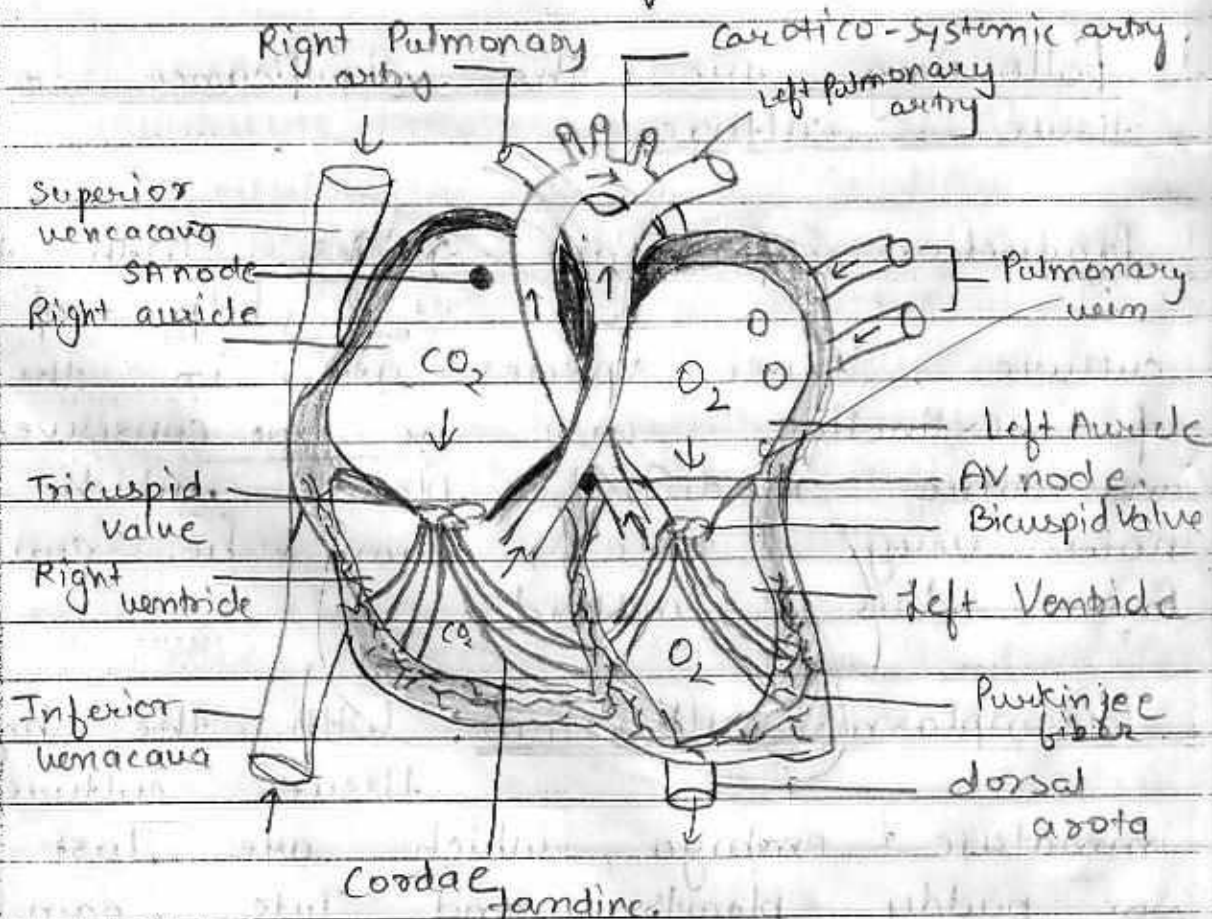
(2) Germplasm cultivation: With the help of tissue culture, some immature embryo, which are lost in sor paddy plants and Jute, can be Preserved in alive condition. In this way, It has great Significance.



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(3) Somatic Hybridisation. → With the help of tissue culture, somatic hybridisation can be done between the two different species, thus the new hybrid can be produced which have different character.

Answer of Ques no- 13.



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Answer of Ques no - 14.

(1) Bile - Bile is secreted in Liver. Bile juice is alkaline in nature. It does not convert any enzyme even then it is very essential for digestion. It is yellowish in colour and stored in gall bladder where its colour is lightly blackish. It has various important role in digestion.

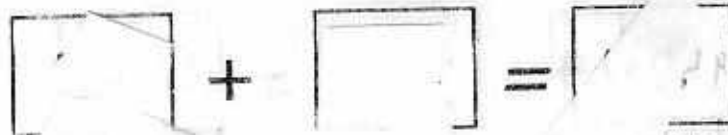
(a) It destroys inorganic salts like carbonate & bicarbonate. neutralise the acidic characters of food.

(2) It provide definite PH for action of enzymes of Pancreatic juice & Succus intestinalis.

It emulsify the fat and dissociate into smaller fat globules. other than this, It contain two pigments - Biliverdin & Bilirubin, helps in excretion.

(ii) Dental formula - "It shows the number and arrangement of teeth in upper and lower jaw." Thus it is the representation of arrangement of different teeth.

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upper and lower half jaw.

(i) Dental formula for milk teeth. -

Incisor - 08

Canine - 04

Premolar - 00

Molar - 08

Dental formula = $\frac{\text{Number of teeth in upper half Jaw}}{\text{Number of teeth in lower half Jaw}}$

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$$= \frac{I \ 2 \ C \ 1 \ PM \ 0 \ M \ 02}{2 \ 1 \ 0 \ 02} \times 2$$

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$$= 20$$

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(ii) for adult teeth. $\Rightarrow$

Incisors = 08

Canine = 04

Premolar = 08

Molar = 12

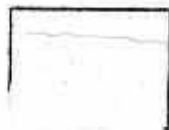
$$\text{Dental formula} = \frac{I \ 2 \ C \ 1 \ PM \ 02 \ M \ 03}{2 \ 1 \ 02 \ 03} \times 2$$

$$= 32$$



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Answer of Ques no-15

Difference
between Spermatogenesis and oogenesis.

SpermatogenesisOogenesis

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|--|--|
| 1) It is the process of formation of Sperm. completed inside testes. | Process of formation of ovum completed inside ovary. |
| 2) Polar bodies are not formed. | Polar bodies are formed. |
| 3) Motile structure are formed. | Non-motile structure are formed. |
| 4) Its growth phase is small. | Its growth phase is comparatively large. |
| It occurs in male. | It occurs in female. |

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Answer of Ques-no 16.

Noise Pollution :- "Unwanted change in normal intensity of Sound is called noise pollution." Sound beyond 80 dB is considered as noise.

Source of Sound Pollution :-

- B (1) Industrial Machines
- S (2) Loudspeaker
- E (3) Television & Radio
- (4) Automobiles
- (5) Aeroplane, trains etc.
- (6) Crackers.

Harmful effects of Noise pollution.

(1) Ear disorder - Some time extreme & Immediate increase in noise may damage the tympanic membrane which may bring temporary or permanent deafness.

(2) Headache - Noise pollution causes long term or short term headache and unable to do work.

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(3) Decreases Concentration - Due to noise pollution, our mind get diverted and peace & concentration of our mind get disturbed, which causes temporary losses.

(4) Effect on Animals - Cattles like, Cow, goat, Buffalo get frightened due to sudden change in sound. like sound produces due to Crackers, loudspeakers etc.

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Answer of Ques no-17.

Biofuel :- Biofuel are obtained from Biological sources and use as bio-diesel in order to reduce Pollution and to substitute the Conventional source of energy. like Petrol, diesel etc.

Main two Biofuel Producing Plants are.

(i) Ratamjot (ii) Karamj.

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(i) Ratanjot

Scientific name - Jatropha curcas.

Family - Euphorbiaceae.

(ii) Origin & distribution - Its origin is considered as in America, and it is widely distributed in India's various States, M.P., Maharashtra etc.

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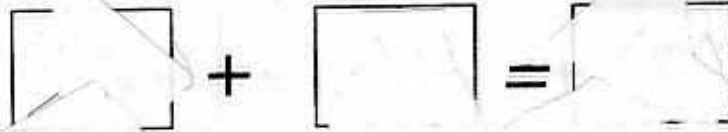
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(iii) Biological characteristics - It is used by farmers, they produce it in ridges to prevent grazing. It is 3-4 m long & 3-4 seeds are obtained from each fruit.

(iii) Uses - (i) Biodiesel - It is used in biodiesel automobile to reduce Pollution.

(ii) Oil cake - After extracting oil the fibrous substance obtained used as fertilizer.

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(i) Karamj -
Scientific name - Pongamia Pinnata
Family - Leguminaceae

(ii) Origin and distribution - There is suspect in its origin place either in Burma or India.

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(ii) Biological characteristics → It has nitrogen fixing capacity.

(iii) Uses → (i) Used as bio-diesel in automobile.

(ii) hair dye → After burning its ash is used to prepare hair dyes.



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Answer of ques no - 18.

Five factors influencing Photosynthesis.

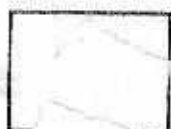
(1) Light $\Rightarrow$ Rate of Photo synthesis is different in different light. It is maximum in red light and minimum in green light. and as the rate of Photosynthesis increases with increase in intensity of light.

(2) Temperature $\Rightarrow$ Rate of Photosynthesis is maximum between the optimum temperature $25-30^{\circ}\text{C}$. either decrease or increase in temperature directly influence the rate of Photosynthesis i.e. decreases

(3) CO_2 $\Rightarrow$ In atmosphere - CO_2 is present in 0.03% and its is sufficient. with the increase in percentage of CO_2 rate of photosynthesis increased remarkably.



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(19) Oxygen (O_2) $\Rightarrow$ Oxygen has adverse effect on Photosynthesis. With the increase in concentration of O_2 in atmosphere, RUBISCO enzyme turned into Oxygenase enzyme and start Photorespiration. Thus decreases the rate of Photosynthesis.

(5) Pollutants - In atmosphere with the increase in pollu

(5) Water - Water never act as a limiting factor in Photosynthesis as only 1-2% of absorbed water is utilised in Photosynthesis. Thus, Water also increases the rate of Photosynthesis.



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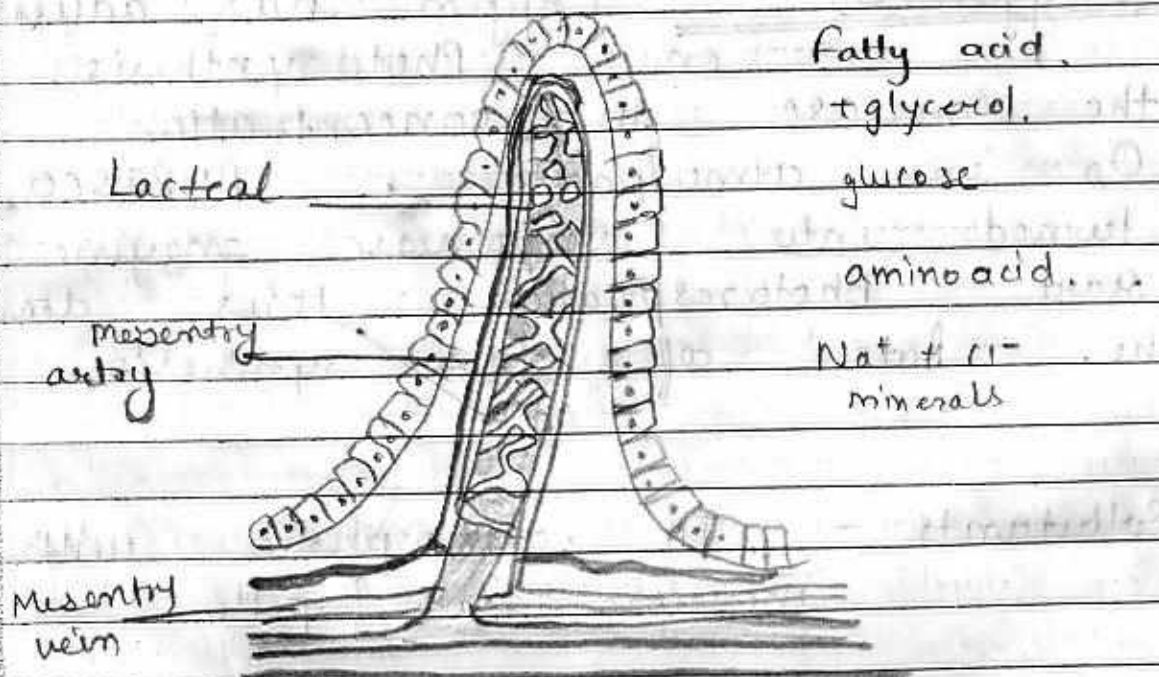


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Answer of Ques no - 19.

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Mechanism of food absorption

In human Intestine, the food is digested in small intestine where.

(i) fats are converted into fatty acid & glycerol.

fats $\rightarrow$ fatty acid & glycerol.

(ii) Carbohydrate is converted into glucose like starch $\rightarrow$ glucose.



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Proteins are converted into amino acids.

Proteins $\rightarrow$ amino acid.

As the structure of Intestine is very suitable as its inner wall forms the numerous 20-40 villi per mm² and each cuboid cell has microvilli them it increases the absorptive surface of intestine.

After digestion glucose is absorbed by mesentery artery from lumen to by simple osmosis process and also various amino acids and minerals like Na⁺, Cl⁻, Ca⁺ are also absorbed by simple osmosis process.

But the fats are the higher molecule so they are emulsified by the Bile Salt, glycocholate and taurocholate and then they are converted into fatty acid and glycerol. With the help of micelle formation it is absorbed through the lymph duct lactated. Thus, all the essential substances are absorbed and sent to liver for excess storage.



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Answer of Ques no - 20

Hydrosere - It is a succession taking place in water following the stages.

B (i) Phytoplankton stage - It is the first stage of hydrosere in which algae, diatoms form the Pioneer community. They grow at the bottom and after their death they increase organic substance in bottom cause slight swallower the bottom.

S (ii) Rooted Submerged stage - It is the second stage in which some Rooted Submerged plants like Hydrilla and Vallisneria are seen. After their death, the diatoms at the bottom get swallower and formed Mud at bottom.



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(3) Rooted floating - Now habitat is so turned such it is good for some rooted ~~sub~~ floating plants like Nelumbo, Nymphae, Teapa etc. and now after their death they are replaced by Rootless floating plant like, Wolffia, Pistia, Utricularia, etc. after their death pond becomes shallower from previous and bottom become more fertile.

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(4) Reed Swamp stage - It is also known as amphibious stage. In this stage such plant grows which upper part remain in air and lower part remain in water. Such plants are like Rumex, Sagittaria, Jussiaea etc.

This stage is followed by Sedge meadow stage and Woodland stage.

(5) Forest stage - Now aquatic habitat is completely changed into Terrestrial habitat. Thus large plants are grow there and they make equilibrium with the climate and various organism are also enter. This forms the most stable community.