माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

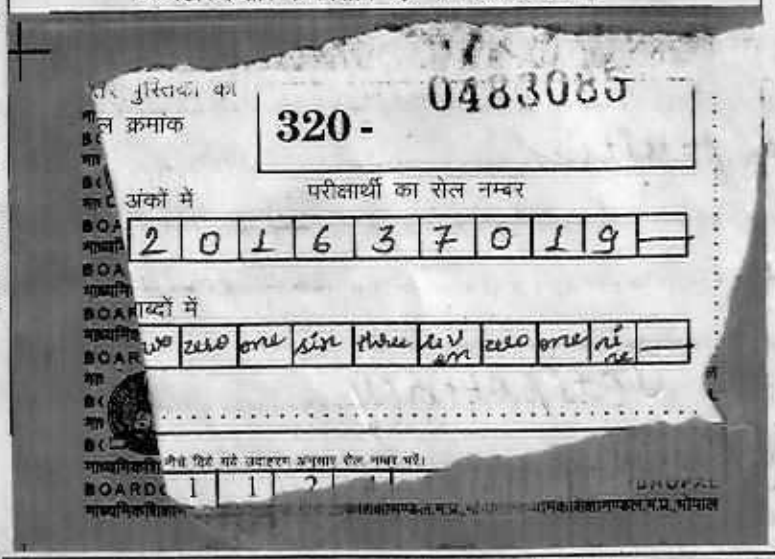
24 पृष्ठीय

परीक्षार्थी द्वारा भरा जावे ↓

परीक्षा का विषय	विषय कोड	परीक्षा का माध्यम
Chemistry Biology	2 3 1	English mediums

स्टीकर तीर के निशान ↓ से मिलाकर लगायें

→ परीक्षार्थी द्वारा भरा जावे



→ केन्द्राध्यक्ष / सहायक केन्द्राध्यक्ष एवं परीक्षक द्वारा भरा जावे

क :– पूरक उत्तर पुस्तिकाओं की संख्या अंकों में X शब्दों में X

ख :– परीक्षार्थी का कक्ष क्रमांक 01

ग :– परीक्षा का दिनांक 11 06 2020

परीक्षा का नाम एवं परीक्षा केन्द्र कोड की मुद्रा

हायर सेकेण्डरी परीक्षा केन्द्र क्रमांक 15[illegible]

पर्यवेक्षक का नाम एवं हस्ताक्षर	केन्द्राध्यक्ष / सहायक केन्द्राध्यक्ष के हस्ताक्षर
11/06/20	

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे ↓

→ परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे

प्रमाणित किया जाता है कि मूल्यांकन के समय पूरक उत्तर पुस्तिकाओं की संख्या उपरोक्तानुसार सही पाई होलो क्राफ्ट स्टीकर क्षतिग्रस्त नहीं पाया गया तथा अन्दर के पृष्ठों के अनुरूप मुख्य पृष्ठ पर अंकों की प्रविष्टी एवं अकों का योग सही है।

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

उप मुख्य परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा	परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा
S.K Kanude SR. 001-2019	[illegible]

केवल परीक्षक द्वारा भरा जावे।

प्रश्न क्रमांक के सम्मुख प्राप्तांकों की प्रविष्टी

रद्दे	प्रश्न क्रमांक	पृष्ठ क्रमांक	प्राप्तांक (अंकों में)
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नोट :– "हायर सेकेण्डरी परीक्षा में केवल वाणिज्य संकाय के वि
प्रायोगिक विषय को छोड़कर शेष विषयों हेतु नियमित एवं स्वाध्य
100 अंकों का होगा किन्तु नियमित छात्रों को 100 अंक के प्र
एवं स्वाध्यायी छात्रों को 100 अंक के प्राप्तांक ही अंकसूची में

प्रश्न क्र.

Ques no-1

Answers

Ans1 Parthenocarpic fruits ✓

Ans2 Walter sutton ✓

Ans3 ~~Tissue culture~~ Totipotency ✓

Ans4 Sequence ✗

Ans5 Lungs of the planet. ✓

Ques no.-2

Answers

Ans1 Conidia ✓

Ans2 Mesozoic ✓

Ans3 Alcoholism ✓

Ans4 Bacillus thuringiensis ✓

Ans5 1986 ✓

योग पूर्व पृष्ठ

प्रश्न क्र.

Ques no. -3

Answers

Ans1 Ovulation ✓

Ans2 Cistron ✓

Ans3 AUG ✓

Ans4 Pisciculture ✓

Ans5 Biocontrol ✓

Ques no-4

(1) IUCD - Copper-T ✓

(2) Mutualism - Lichens ✓

(3) Biston Sitularia - Melanism ✓

(4) Man made insulin - Humulin ✓

(5) Energy flow - 10% law ✓

Ques no. - 5 [Or]

MEDICAL TERMINATION OF PREGNANCY

Ans 5 Induced or intentional abortion before the foetus become viable is called medical termination of pregnancy or MTP

Medical termination of pregnancy is done to get rid of unwanted pregnancy due to rape, casual relationship or in the cases where the continuation of pregnancy can be harmful for the ~~death~~ life of either mother or foetus or to both.

Ques no. - 6

SOMATIC HYBRIDISATION

Ans 6 The process of fusion of somatic cells to produce somatic hybrid is called somatic hybridisation. In this process, the cell wall of somatic cells are removed and protoplast are fuse to form callus which later differentiate into somatic hybrid.

प्रश्न क्र.

Example - By somatic hybridisation of potato and tomato, a new variety 'pomato' is developed

(Tomato × potato) ⟶ Pomato

& Somatic hybridisation is performed to increase the areas of crosses and hybridisation.

B S E

Ques no. - 7

BIOMAGNIFICATION *

Ans7 Biomagnification refers to the increase in the concentration of toxic substance at each successive trophic level. These toxic substances are neither metabolise nor excreted out through urine but increases at each trophic level.

When birds consume these toxic substances like (DDT) etc then it adversely affect their calcium metabolism. This result in thinning of their egg shell and premature breaking resulting in decline in bird population.

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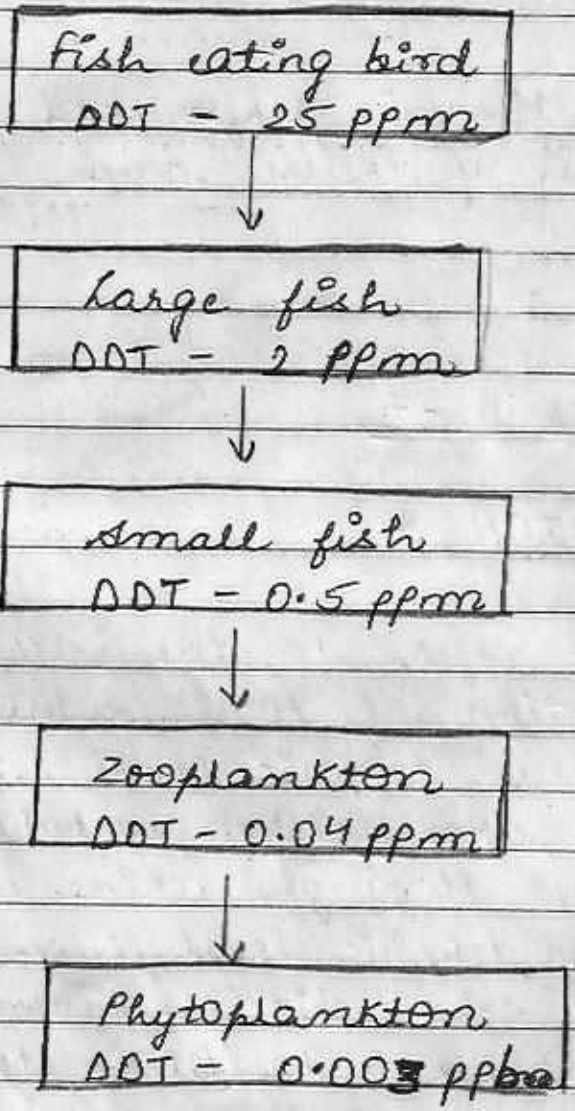
Example - In aquatic ecosystem, the concentration of DDT increases at each trophic level of food chain



Ques no. - 8 [05]

AMNIOCENTESIS - Amniocentesis is a prenatal test in which small

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amount of amniotic fluid is removed from the sac surrounding foetus. This fluid is removed out through an injection inserted in uterus under the guidance of ultra sound. This fluid is then sented to laboratory for analysis. A no. of test can be performed on this sample of amniotic fluid.

Amniocentasis is performed to found any chromsomal or other genetic disorders in foetus like down syndrome, spina bifida etc.

But, this prenatal test is misused for the determination of sex of foetus and killing the normal female foetus.

In India, amniocentasis is legally banned for determining the sex of foetus.

Queno-9

GENETICALLY MODIFIED ORGANISM (GMO)

The organisms which have had their DNA manipulated to possess and express an extra gene are

प्रश्न क्र.

called genetically modified organism ~~or~~ (GMO).

Importance *

(1) Many genetically modified organisms serves as model to determine how genes are regulated and how they affect normal physiology of organism

(2) The food obtained from genetically modified organisms are rich in nutritive value.
For example - The milk obtained from ~~trangenic~~ transgenic cow rosie is rich in human protein α-lactalbumin

(3) The genetically modified plants show great tolerance to abiotic factor such as light, temperature, salinity, drought

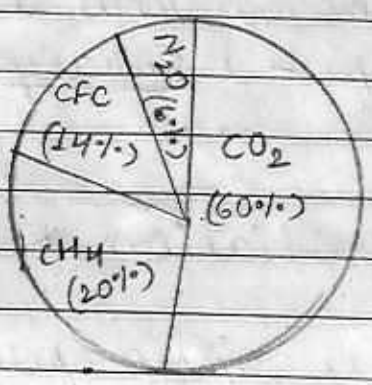
(4) The genetically modified plants have reduced dependence on chemical pesticides & fertilizers.
Ex :- Bt cotton. etc.

Ques no. - 10 [05]

Ans GREEN HOUSE EFFECT *

Green house effect is naturally occuring phenomena in which radiations of short wavelength are absorbed while the radiation of long wavelength are reflected through surface. This green house effect is responsible for the temperature of Earth surface.

The gases that produce green house effect are called green house gases. Ex - carbon dioxide, methane (CH_4), CFC's, nitrous oxide etc.



Following are the causes of green house effect -

(1) Excessive burning of fossil fuels

(2) Massive use of automobiles

(3) Increased use of biofertilisers such as urea etc.

(4) Increased use of air conditioners and refridgerators.

Ques no. - 11 [Or]

Ans 11 The process by which m-RNA is synthesised from DNA inside the nucleus is called transcription.

Trancription of m-RNA involved following steps - [Eukaryotic transcription

* Initiation *

- In this process, RNA polymerise bind ~~cobic~~ transiently ~~ebit~~ with initiation factor (σ factor) and bind transiently ~~ebi~~ with specific sequence on DNA called promoter
- DNA strand with 3' → 5' polarity act as template

* Elongation *

- After binding with initiation factor, RNA polymerase facilitate the opening of DNA chain.
- It uses adenosine guanoside triphosphate and polymerises the nucleotide along 5' → 3'
- The elongation continues till RNA polymerase enzyme reaches the termination region

* Termination *

- When RNA polymerase reaches terminati-on region it bind with termination factor (ρ-factor) and process stops
- ~~RNA~~ Nascent RNA released out

This primary transcript contains both exons (coding region) and introns (non-coding region). Thus, it undergo splicing where introns are removed and exons are joined ~~by~~ to form functio-nal m-RNA

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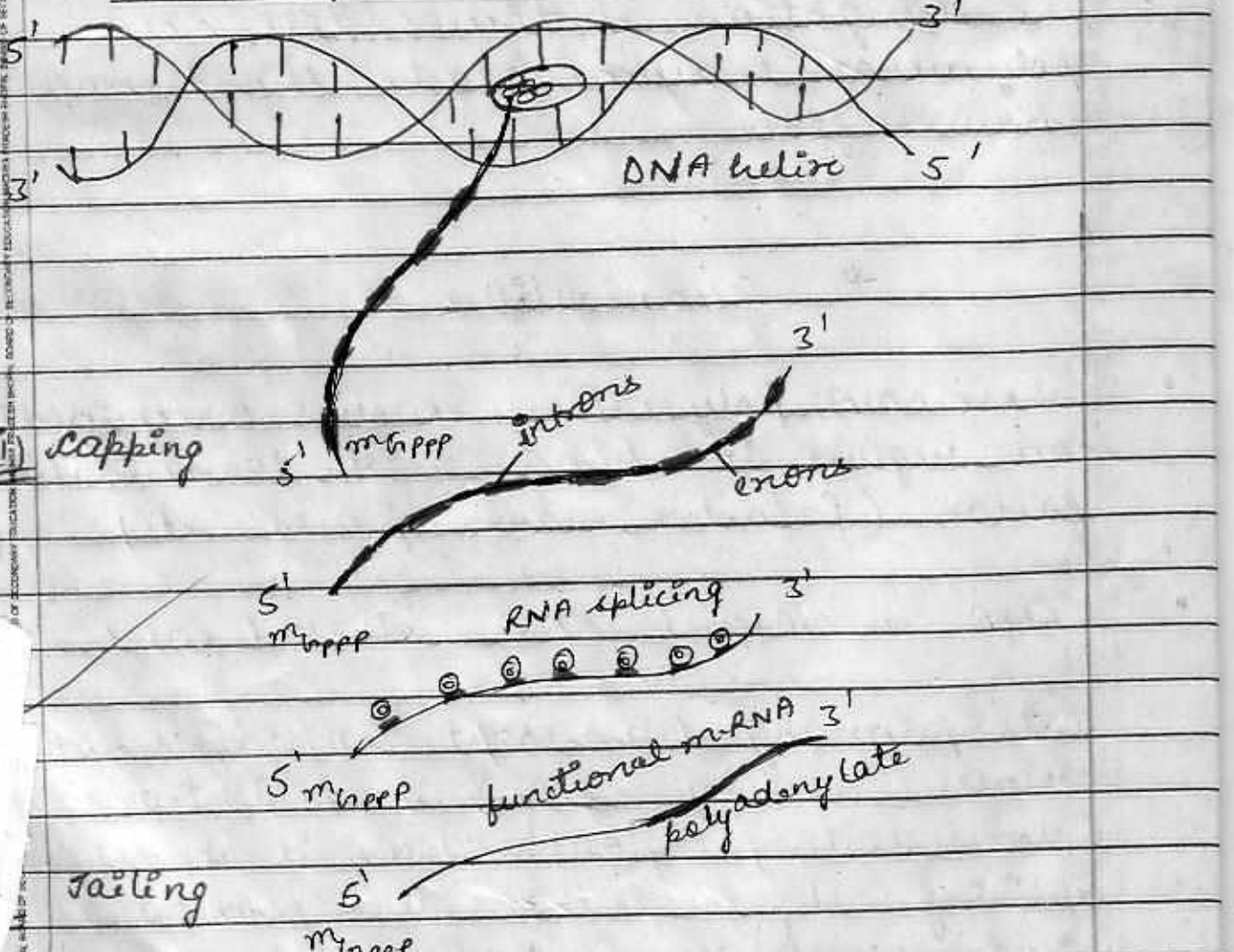
hn-RNA undergoes two more processing

(i) Capping - In this, methyl guanoside triphosphate is attach at 5' end of m-RNA

(ii) Tailing - In this, polyadenylate is attached at 3' end.

Transcription in Eukaryotes



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Quesno. - 17

HOMOLOGOUS ORGANS	ANALOGOUS ORGANS
(1) The organs which shows similarity in origin and struct-ure and perform different functions are called homologo-us organs.	(1) The organs which are similar in function but are different in origin and structure are called analogous organs.
(2) Homology shows common ancestory	(2) Analogy shows different ancestory
(3) Homologous organs favour divergent evolution	(3) Analogous organs favours convergent evolutio-n
(4) Examples - hands of man and forelimb of ~~a~~ cheetah have common structure but ~~has~~ man uses hand for capturing while cheetah uses its forelimb for hunting	(4) Example - flippe-rs of whale and dolphin represents analogous organs

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Quesno.-13 [or]

* ANTIBODY *

Antibody are proteins that belongs to the class of globulins so they are called immunoglobulins (Ig).

When an antigen or other foreign substance enters inside the body then it stimulates immune system to ~~protein~~ produce a immunoglobins. Antibodies are found in lymph and tissue fluid.

Structure of antibody.

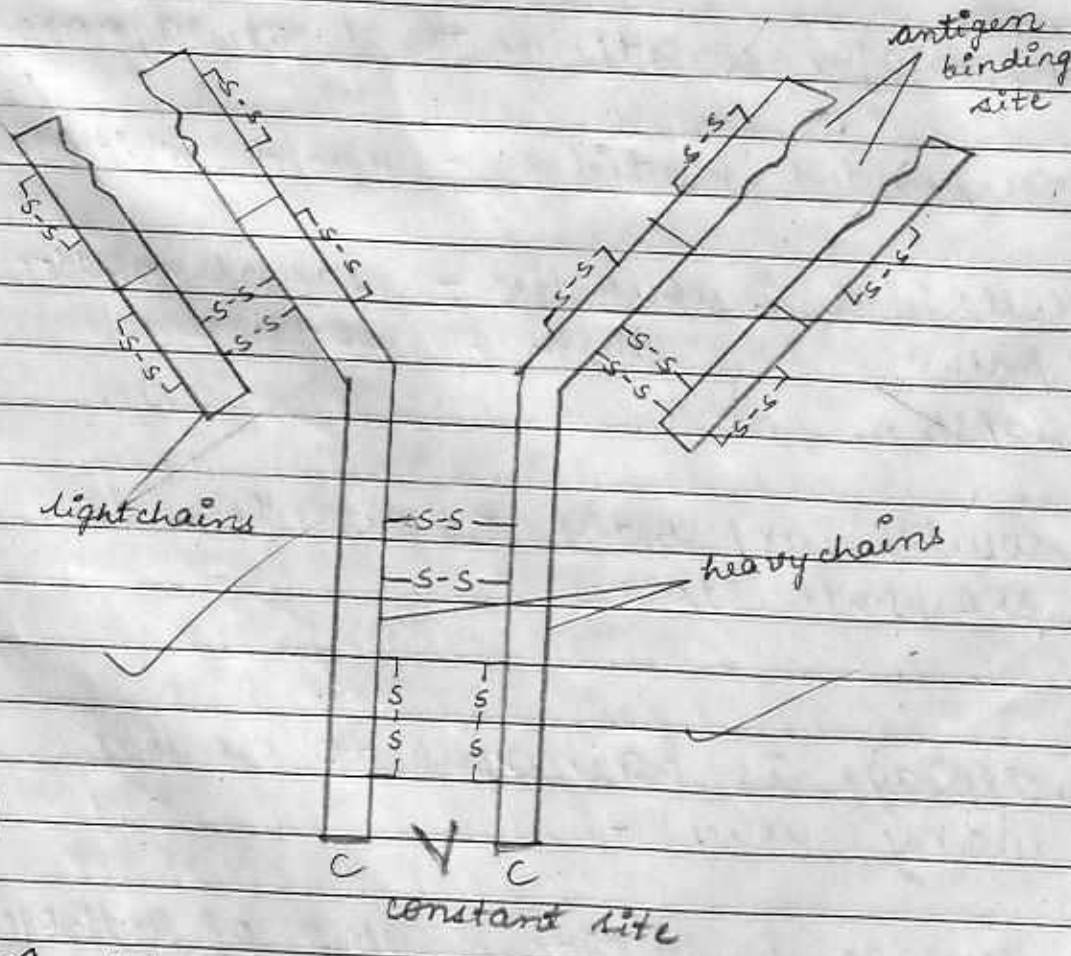
Each antibody molecules consists of four polypeptide chains which are made up of several amino acid. These ~~two~~ polypeptide chains are connected through each other by disulphide bridges or bonds.

Out of four polypeptide chains, two small chains are called light chains. These light chains are composed 200 amino acid whereas remaining two large chains are called heavy chains

These heavy chains are composed of 400 amino acid.

These light and heavy chains gives antibody a Y-shaped structure.

The two identical fragments of antibody have antigen binding site while the third fragments cannot bind with antigen so it is called constant region



Antibody molecule

Queno-14

Ans * SEWAGE *

The municipal waste water that comes from houses, offices, markets e is called sewage. It generally contains fes faecal matter, plastics, papers, and other waste.

B S E

The major constituents of sewage are

(i) Suspended particles - sand, silt etc

(ii) colloidal impurities - faecal matter, pathogens, fibres of cloths and paper.

(iii) soluble impurities - nitrate, phosphate etc.

* Sewage is harmful to us in many ways -

(1) Sewage is major source of pathogen that causes various water born diseases like typhoid, jaundice ek cholera etc.

(2) Due to the presence of only 0·1 ~~%~~ percentage impurities, a large amount of water is wasted

(3) Open sewage is potent source of breeding for various disease causing insects and pest.

(4) Discharge of sewage water in natural resources without treatment causes water pollution.

(5) Sewage increases organic matter to the water when it is discharged without treatment. This ~~res~~ results in increases the BOD of water resulting in oxygen deficiency.

Ques no. -15

*POLYMERASE CHAIN REACTION [PCR] *

The process by which adequate amount of DNA is produced by treating DNA fragments in vitro is called = polymerase chain reaction ration.

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or [PCR]. Billion of copies of DNA can be obtained when the reaction is repeated at high temperature

★ Principle of PCR *-

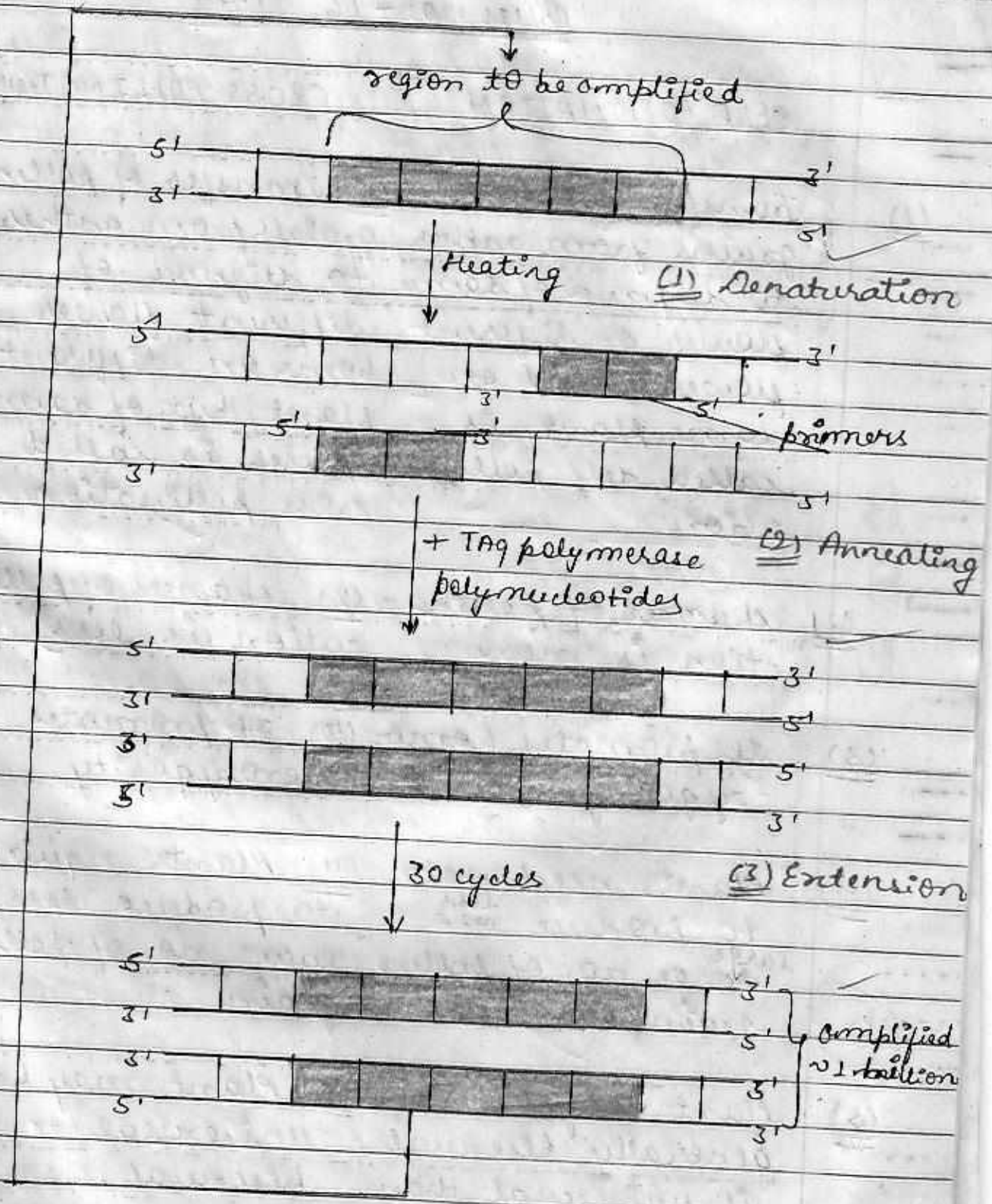
When two DNA strands are heated then they denatured and become seperated. Taq RNA polymerase enzyme make two replicas of these strands resulting in the formation of double stranded DNA.

* steps involved in PCR *

(1) Denaturation - The two DNA strands are denatured when they are heated at high temperature

(2) Annealing - Two RNA primers (oligonucleotides) are attached with each DNA strand in the presence of polymerase enzyme

(3) Extension - Taq polymerase enzyme increases the primers by using nucleotides provided by nucleus.



Polymerase chain reaction

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Ques no. - 16 [Or]

	SELF POLLINATION	CROSS POLLINATION
(1)	Transfer of pollen grains from anther to stigma of same flower or different flower found on same plant is called self pollination	(1) Transfer of pollen grains from anther to stigma of different flower borne on different plant but of same species is called cross pollination
(2)	chances of pollination is more	(2) chances of pollination is less
(3)	It promotes homozygosity	(3) It promotes heterozygosity
(4)	Plants need not to produce ~~small~~ large no. of pollen grains.	(4) Plants require to produce ~~less~~ more no. of pollen grain
(5)	Plant ~~may be~~ is generally bisexual if unisexual then both male and female plants are present	(5) Plant may be unisexual or bisexual.

Ques no. - 18

Ans 18 The plants living in extreme xeric conditions are known as xerophytic plants. These plants have to cope with the conditions of high temperature so their adaptation generally based on to protect plant from high temperature -

* Adaptations found in xerophytes

(1) The roots of these plants grows very deep within the soil to extract water.

(2) In these types of plants, special metabolic pathway called CAM (Crassulacean acid metabolism) pathway is found. morphological ? asked

(3) The leaves of some plants is ~~covered~~ covered thick cuticle.

(1) The stomata found in xerophytic plants are sunken to reduce water loss during transpiration.

(1) Mechanical tissues are highly developed

प्रश्न क्र.

(6) Leaves are modified to spines (Opuntia) to avoid water loss and photosynth-esis takes place through green stem.

Ex Cactus, opuntia etc.

Ques no. - 17 [or]

B S E

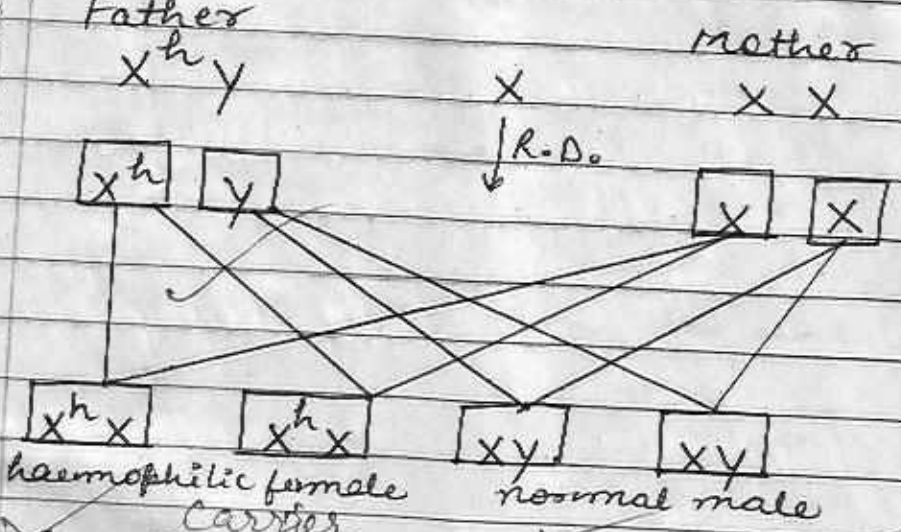
Haemophilia - Haemophilia is sex linked recessive disorder which is transferred from unaffected carrier female to some of her male child. The gene for haemophilia is located on X-chromosome.

* Haemophilia is caused due to defect in one of the protein that is involved in blood clotting. ~~In this~~ As a result, the patient continue bleeding even in minor injury.

* Inheritance of haemophilia when diseased father and normal mother will produce children —

Haemophilic father — X^hY

~~Haemophilic~~ normal mother — XX



Results -

When haemophilic male & normal female are crossed then offsprings are obtained in ratio of 1:1 i.e. 50% as haemophilic carrier female and 50% normal male.