

2023

माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

32 पृष्ठीय



परीक्षार्थी द्वारा भरा जावे ↓

पक्षा का विषय	विषय कोड	परीक्षा का माध्यम
Biology	2 3 1	English
स्टीकर तीर के निशान ↓ से मिलाकर लगावे		
सरल क्रमांक	B-23	4754241
अंकों में	परीक्षार्थी का रोल नम्बर	
	- 2 3 4 5 2 6 1 9 1	
शब्दों में	- TWO THREE FOUR FIVE TWO SIX ONE SEVEN ONE	

नीचे दिये गये वयाहृण अनुसूचक कोल नम्बर भरे।

राहरणार्थ

1	1	2	4	3	9	5	6	8
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क. परीक्षार्थी का कक्ष क्रमांक 03

ख. परीक्षा का दिनांक 10 03 2023

परीक्षा का नाम एवं परीक्षा केंद्र क्रमांक की मुद्रा

हायर सेकण्डरी परीक्षा 451013

परीक्षक का नाम एवं हस्ताक्षर : केन्द्राध्यक्ष/सहायक केन्द्राध्यक्ष के हस्ताक्षर

के.डी. गौरी

केन्द्राध्यक्ष

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे ↓

प्रमात किया जाता है कि होलो क्राफ्ट स्टीकर क्षतिग्रस्त 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 संसद के नाम की मुद्रा लगाए।

उपरोक्त परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा : परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा

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केवल परीक्षक द्वारा भरा जावे।

प्रश्न क्रमांक के सम्मुख प्राप्तांकों की प्रविष्टि करें।

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कुल प्राप्तांक शब्दों में		कुल प्राप्तांक अंकों में

केंद्राध्यक्ष/सहायक केंद्राध्यक्ष एवं परीक्षक द्वारा भरा जावे

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे

2



योग पूर्व पृष्ठ



प्रश्न क्र.

Ans. of Q.1.

- (i) Endometrium
- (ii) Ampullary region (Fallopian tube)
- (iii) Gregor J. Mendel
- (iv) drug (charas, ganja). Cannabinoids
- (v) Upright type
- (vi) false fruit
- (vii) Polyembryony

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Ans. of Q.2.

- (i) Rosie is the first transgenic cow
- (ii) Transcription
- (iii) Rheumatoid Arthritis
- (iv) Widal Test



प्रश्न क्र.

(v) Death rate (Mortality).

(vi) The Hotspots of India → Himalaya, western ghats of Sri Lanka, Indo-Burma.

(vii) Restriction enzyme (Endonuclease & Exonuclease) are known as molecular scissors.

**B** Ans of Q. 3.

**S**

(i) Consumer.

(ii) stem cell.

(iii) utton and Boveri.

(iv) Bacillus thuringiensis.

(v) Dormancy.

(vi) Lactobacillus.

(vii) Tapetum.





प्रश्न क्र.

Ans. of Q. 4.

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A.	B.
(i) Ex-situ Conservation.	Zoological parks.
(ii) Sunken stomata.	Adaptation.
(iii) Entamoeba.	Amoebiasis.
(iv) Gel electrophoresis	Separation of DNA fragment.
(v) Penicillin.	First Antibiotic.
(vi) Thalassaemia.	Recessive gene blood disease.
(vii) Turner's Syndrome.	Absence of 1 X-chromosome

Ans of Q. 5. (oh)

Homozygous	Heterozygous.
(i) They have similar pair of Allele. eg. $\rightarrow$ TT, tt.	(i) They have dissimilar pair of allele. eg $\rightarrow$ Tt.



(ii) They produce one type of gamete.

(ii) They produce two types of gametes.

(iii) They possess either dominant or recessive.

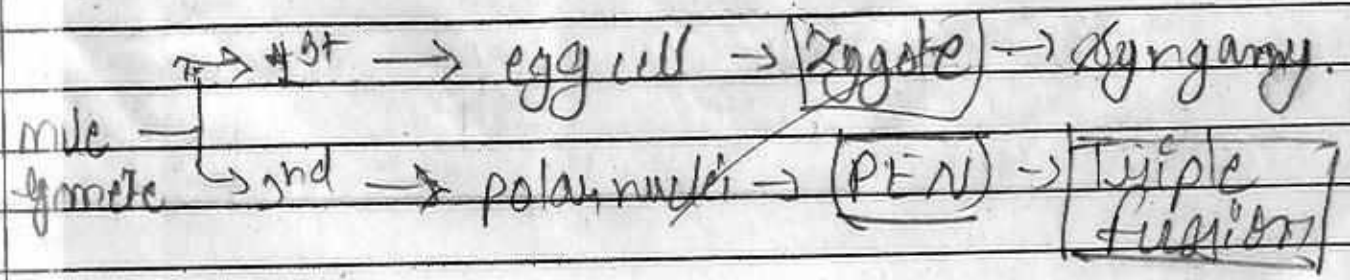
(iii) They have both dominant and recessive.

Ans of Q.6.

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Triple fusion → It is a step of Double fertilisation.

When fertilisation occurs two male nuclei are released in embryo sac in which one is fused with polar egg cell and form zygote while the other fuse with two polar nuclei located in the central cell which result in the formation of triploid (EN) (Primary Endosperm Nucleus) which later convert into PEC. Hence, the fusion of three haploid nuclei, the process is called Triple fusion.





### Ans of Q. 7.

Parturition → The period of pregnancy is called gestation period. At the end of the gestation period, vigorous contraction by uterus cause expulsion or the delivery of the foetus. This delivery of foetus or childbirth is called Parturition.

This phenomenon is induced by complex neuroendocrine gland. Oxytocin is the hormone released during parturition.

### Ans. of Q. 8. (OR)

<u>Disease</u>	<u>Caused by</u>
(i) AIDS	HIV
(ii) Syphilis	<i>Treponema pallidum</i>
(iii) Chlamydia	Chlamydia
	Trachomonitis.



7



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Ans. of Q.9.

BOD → BOD stands for Biological  
Oxygen Demand.

BOD is refers to the amount  
of oxygen that consumed by  
aerobic bacteria in the formation  
of organic matter by oxidising the  
given sample of waste water.

The greater the BOD, the greater the  
water has polluting capacity.

It is affected only in secondary  
treatment of sewage.

Ans. of Q.10.

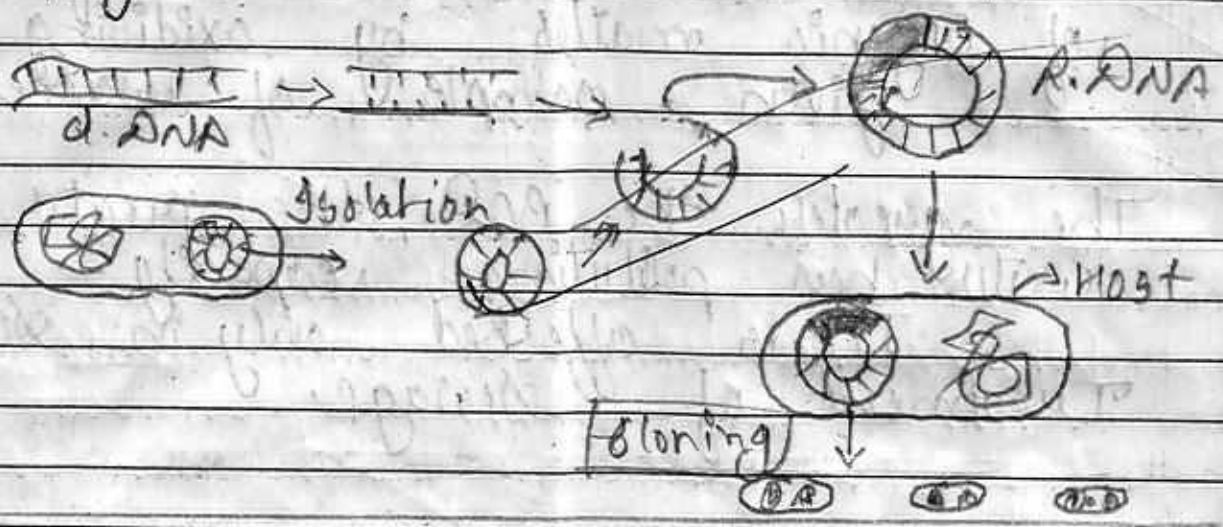
Cloning → It is the result of asexual  
reproduction. The process  
in which single parent individual  
produce is offspring.

Cloning → The process in which  
Recombinant DNA (vector + foreign  
DNA) is inserted into the host  
cell, which reproduce rapidly.



with which the foreign DNA also copied, produce the desired product is called cloning.

It is the process in which in which we can obtain desired DNA in large quantity by small segment.



B  
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Ans of Q. 11.

→ Causes of AIDS. →

(i) It may transfer through sexual contact with infected person.

(ii) Transfusion of contaminated blood with blood of normal patient.





- (ii) The child which born by infected mother.
- (ii) By sharing of needles.

Ans. of Q. 12. (or)

→ The nitrogenous bases found in RNA are :-

- |               |     |                   |
|---------------|-----|-------------------|
| i) Adenine    | } → | <u>purin</u> .    |
| ii) Guanine   |     |                   |
| iii) Cytosine | } → | <u>pyridine</u> . |
| iv) Uracil    |     |                   |

in which ; Adenine attached to

Ans. of Q. 13

Test Cross → The cross of  $F_1$  generation with with recessive parent is called Test Cross.

(or)

The cross made to know whether the given phenotype dominant is homozygous or heterozygous, offspring of  $F_1$  generation which with



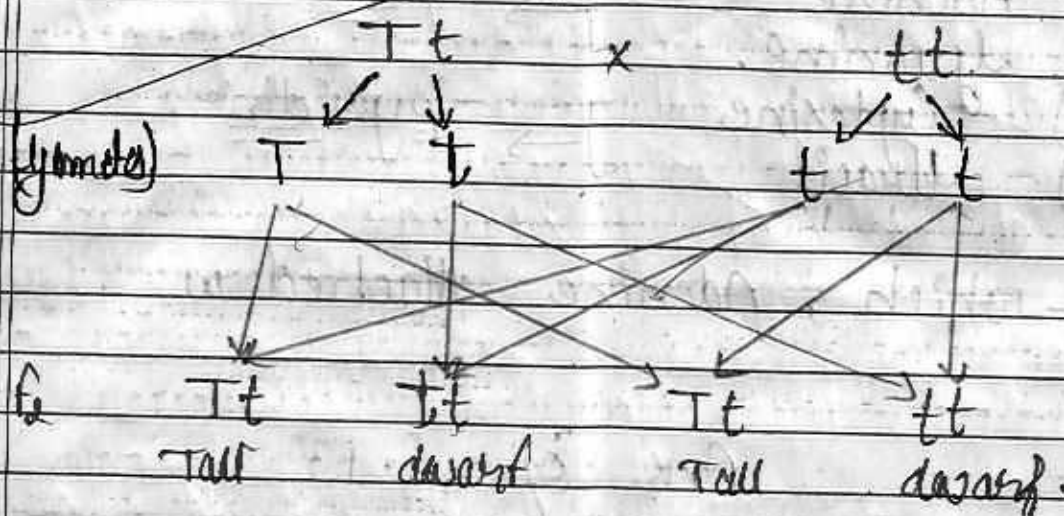
Recessive parent are crossed, is known as Test Cross.

Diagrammatic Representation.



cross of  $Tt$  with recessive parent  $tt$ .

USE



Phenotype  $\rightarrow$  Tall : Dwarf = 2 : 2  
 Genotype  $\rightarrow$   $Tt : tt = 2 : 2$

Hence, the given  $Tt$  phenotype is heterozygous.



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 अंक 0. 14.

The measures useful for prevention & control of drug and alcohol use-

1) Avoid undue peer pressure → One should avoid the unnecessary pressure by elders or family for anything such as job and being self-dependent etc.

(i) Education and Counselling :- One should have aware about problem and have knowledge of health problem by alcohol and drug.

(ii) Seeking help from parent and peers → If one get addict to drug or alcohol, should have to talk with parent and take their help and suggestion.

(iii) Seeking help of professional or medicinal → the person should consult the professional or medicinal expert.

(iv) Look for danger signals.





Ans. of Q.15. (05)

Decomposition → The process in which complex organic matter is broken down in simple inorganic matter by decomposers, like,  $H_2O$ ,  $CO_2$  etc, is called Decomposition.

It is a largely oxygen requiring process. The dead organic matter used by decomposers is called Detritus.

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\* Decomposition involve following process:-

- (1) Fragmentation, (2) Leaching, (3) Catabolism
- (4) Humification (5) Mineralisation

(1) Fragmentation → Detritus breakdown by detritivorous into simple small particle.

(2) Leaching → The insoluble salt precipitate in soil with help of  $H_2O$ .

(3) Catabolism → Bacterial & fungal enzymes



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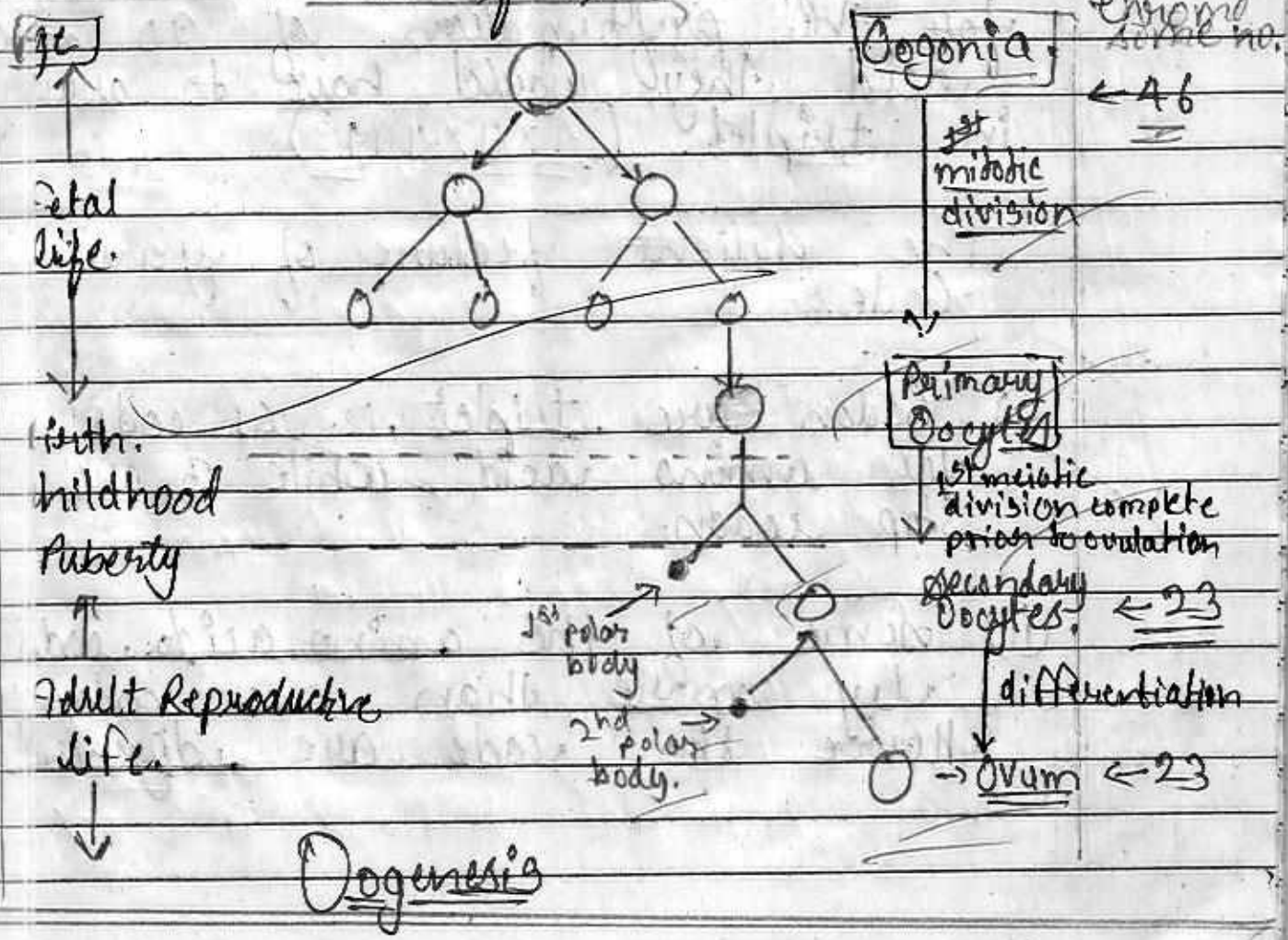
further degrade it-

(4) Humification → It leads to the formation of black-colored amorphous substance called humus.

(5) Mineralisation → The humus further degrade by microbe and the nutrient get mix into soil.

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Ans. of Q.16.





14



प्रश्न 1.

Analysis of Q. 17.

Genetic Code  $\rightarrow$  Nucleotide triplet which are responsible for protein or amino acid formation are called genetic code.

The code is made up of three nucleotide called codon

It was first argued by George Gamow that there are four types of nucleotide, and for the formation of 20 amino acid they would have to arrange in triplet.  $(4 \times 4 \times 4) (4^3)$

The salient feature of genetic code is:-

(i) Codon are triplet, i.e. 64 code for amino acid while 3 are stop codon.

(ii) Some of the amino acids codes by more than one codon. Hence the code are degenerate.



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(ii) The codon are read by mRNA in contiguous fashion, i.e. without any punctuation.

(v) The codon are universal, means the it codes for same amino acid in all organism.

(vi) AUG has a dual nature - it codes for methionine as well as initiation codon.

(vii) UAA, UGA and UAG are stop codon and does not code for any amino acid.

Ans. of Q. 18 (vi).

Ecological Succession → The gradual and fairly predictable changes in species composition in an given area is called ecological succession.

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13.9mm x 16

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99.1mm x 2

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16A4

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प्रश्न 3

The succession of different communities on the bare rock is known as Xerarch.

Ex → The lichen which first invades on the bare rock leads to the degradation of rock to soil in several thousands of years, small grass start grow in such Area for some years then leads to the perennial grass and then shrubs. The last community nearly in equilibrium is the forest or tall trees.

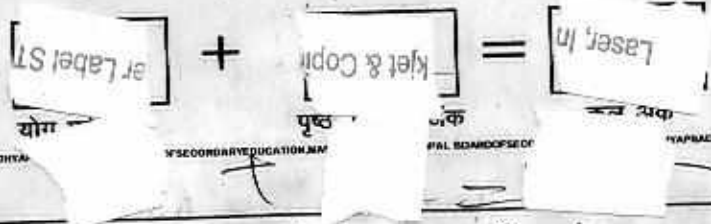
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In ecological succession changes take by the communities named →

- (i) pioneer community
- (ii) seral stage or seral community
- (iii) Climax community

(i) Pioneer community → The first community that invades the bare rock

17



and turn them into soil in several thousands of years called pioneer community.

(ii) Seral Community → The transitional community between pioneer and climax community is called Seral Community.

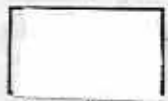
(iii) Climax Community → The final community that is in equilibrium with environment and does not change is called Climax Community.

Sere → The entire sequence of community that successively change is called Sere.

Diagrammatic Explanation →



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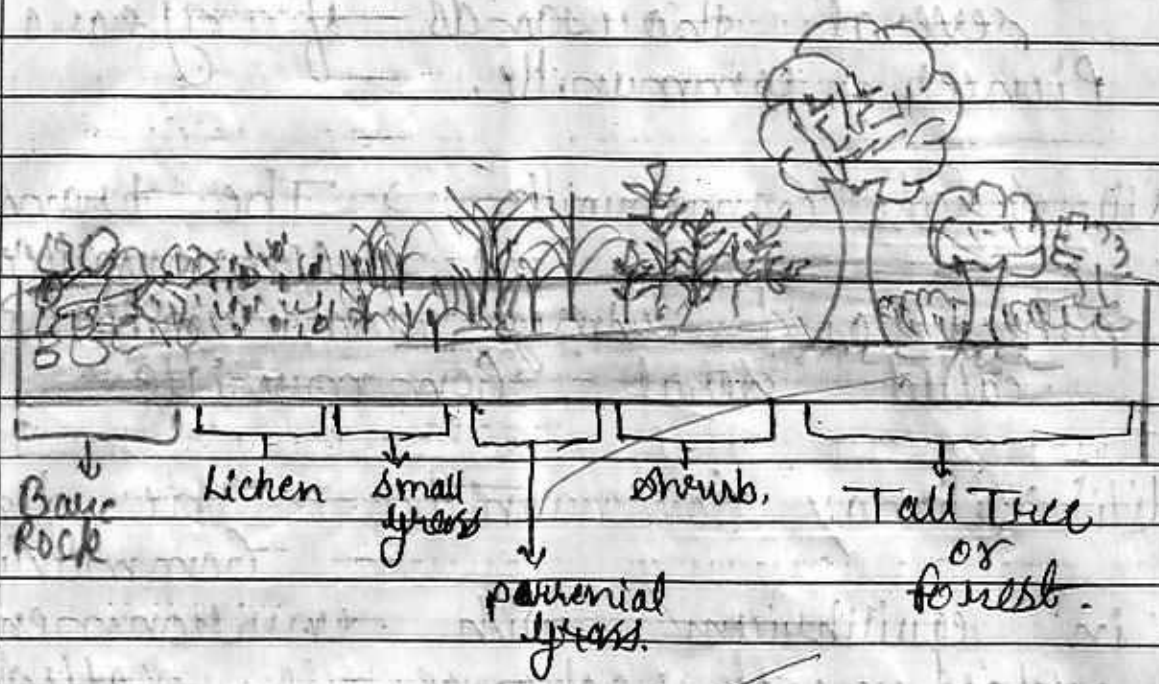
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पृष्ठ 18 के अंक

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In above situation →

Lichen → Pioneer Communities.

Trees or forest → Climax Communities.

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### Ans. of Q. 19

→ Several steps for recombinant DNA Technology:-

- 1) Firstly, desired DNA called foreign DNA or target DNA or Alec DNA is selected → Isolation of whole DNA.
- 2) The DNA segment is treated with Restriction enzyme.
- 3) The foreign DNA segment is inserted into the suitable vector (such as pBR 322) → called Recombinant DNA.
- 4) The vector is inserted into host cell through the process such as Microinjection or gene gun.
- 5) Multiplication and copying is done by host cell by giving it suitable condition.
- 6) The product is separated from host cell.
- 7) Obtain desired product.

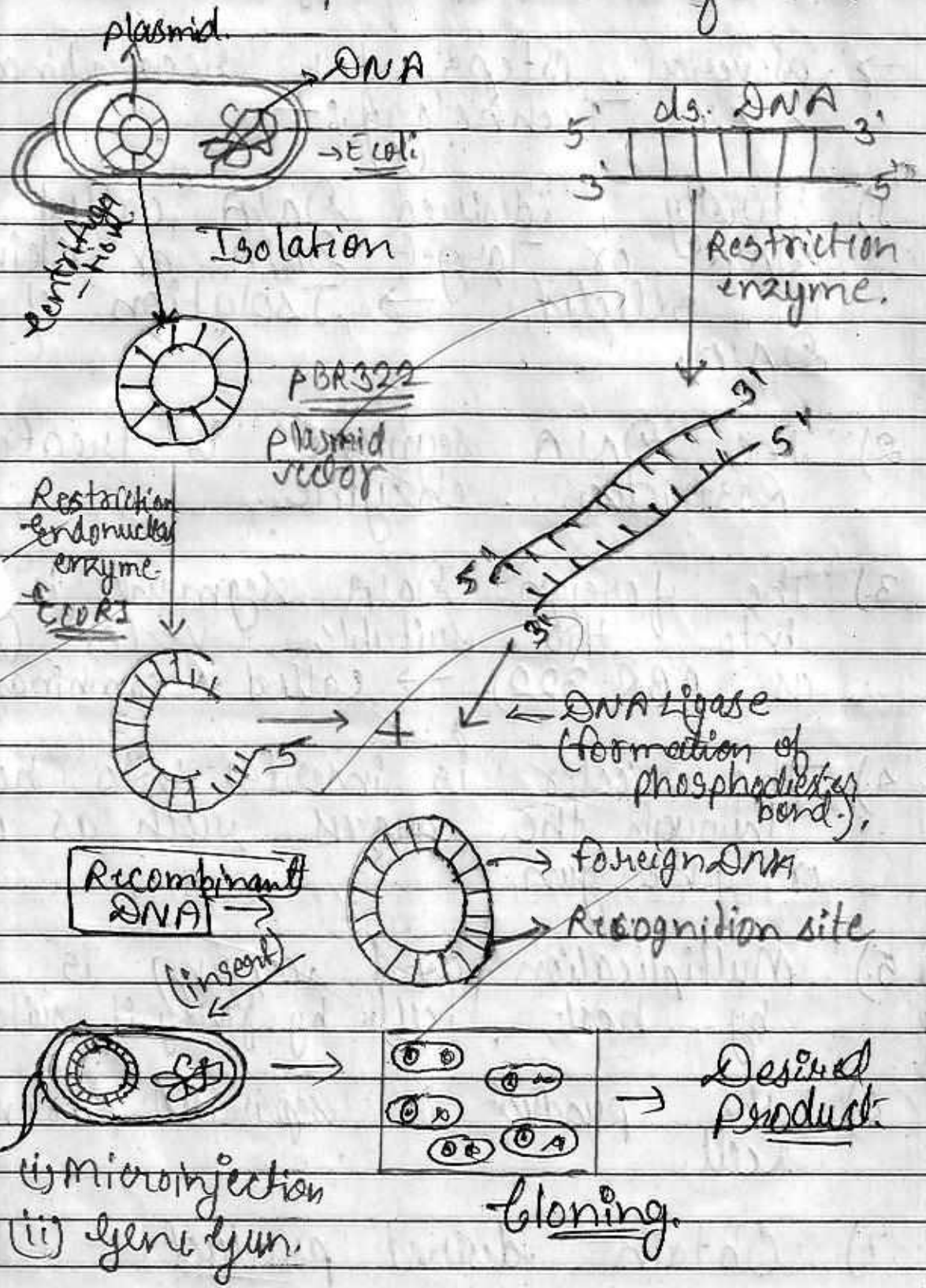
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7) Desired product are formed.



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- (i) Microinjection
- (ii) Gene gun.

Cloning

Desired Product



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Laser, Inkjet



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Recombinant DNA → The plasmid DNA with foreign DNA is called Recombinant DNA or chimeric DNA

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