



BIOLOGY

BOOKS - NAVBODH BIOLOGY (HINGLISH)

SHORT ANSWER QUESTIONS -II

Ch 1 Genetic Basis Of Inheritance

1. A homozygous tall pea plant is crossed with its homozygous recessive parent. Find out the

genotypic and phenotypic ratio with the help of Punnet square method.



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2. State and explain Mendel's second law of inheritance.



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3. State and explain the law of segregation of characters.



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4. Explain incomplete dominance with the help of a suitable example.



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5. Why the ratio in pleiotropy is 2 :1 Explain it with example.



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Ch 2 Gene Its Nature Expression And Regulation

1. Give the names and functions of enzymes involved in lactose metabolism in E. Coli:

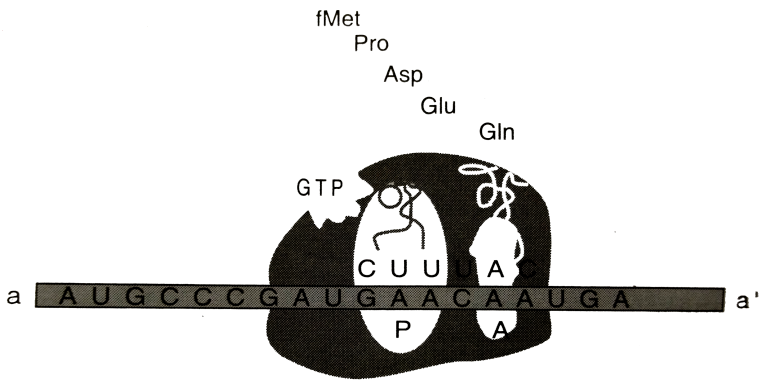


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2. Enlist the essential requirements for protein synthesis.



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3.

(a) Identify the polarity from a to a in the above diagram.

(b) How many more amino acids are expected to be added to the-polypeptide chain?

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4. In the light of Griffith's experiment , explain the action of two strains of Diplococcus pneumoniae and give his conclusion .



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5. With the help of a suitable diagram describe the structure of a nucleosome.



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6. Give the structure of ribosome.



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7. Explain wobble hypothesis with suitable diagram.



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8. Describe the wobble hypothesis.



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9. Diagrammatic representation to show a perfect pairing and any two wobble pairing.



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10. With the help of a suitable example illustrate palindrome.



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1. Describe the tools used in rDNA technology.



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2. Explain how plasmids are used as vectors in genetic engineering.



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3. What are bacteriophages? Describe how are they used as vectors?



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4. For transfer of small amount of genetic material from one bacterium to another, virus can be used as vector. How can this be achieved for replication of viral DNA?



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5. Give applications of PCR technique.



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6. Define Jumping genes. Classify them on the basis of their mechanism.



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7. Describe the steps of PCR technique.



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8. Write a note on recognition sequences or restriction sites.



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9. What are transgenic plants ? Explain with any two examples.



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1. Describe any two applications of tissue culture technique.



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2. What is Biofortification ? Explain selective breeding with suitable example .



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3. Explain selective breeding. Give any 'two' examples and their nutrients obtained by selective breeding.



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4. Explain micropropagation and somatic hybridization.



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5. Describe different steps involved in tissue culture technique.



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Ch 5 Microbes In Human Welfare

1. What are biocontrol agents? Mention any two groups of biocontrol agents and their hosts.



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2. Write a note on Rhizobia as a biofertilizer.



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Ch 6 Photosynthesis

1. Explain how photosynthesis takes place during the day in spite of stomata being closed in certain plants.



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2. Give an account of cyclic photophosphorylation.



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3. Give schematic representation of cyclic photophosphorylation.



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4. What is photorespiration? Explain it with diagrammatic representation.



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Ch 7 Respiration

1. What is anaerobic respiration? Explain the mechanism of anaerobic respiration.



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2. Describe the mechanism of anaerobic respiration.

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3. The connecting link between glycolysis and Krebs cycle is

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4. Describe the acetylation of respiration.





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Ch 8 Reproduction In Plants

1. What are the two types of hydrophily?

Describe them briefly.



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2. Explain the process of pollination in Vallisneria .How is it different in water- lily , which is also an aquatic plant ?



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3. Describe the development of endosperm in angiosperms.



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4. Give the floral adaptations for anemophily.



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5. What are endospermic and nonendospermic seeds? Give one example of each.



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6. What is endosperm? Describe endospermic and nonendo-spermic seeds.



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1. Describe the concept of energy flow.



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2. In an ecosystem the energy flow is always unidirectional.



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3. Define 'deforestation'. Comment on its effects.





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4. What are the causes of deforestation?



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5. Suggest measures to conserve the forests.



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Ch 10 Origin And Evolution Of Life

1. Haldane described 'Hot dilute soup' in his theory. Describe how this soup led to formation of some important molecules.



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2. Explain the action of natural selection with reference to industrial melanism



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3. Describe the Darwin's theory of natural selection



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4. What are the different types of pre-mating or prezygotic and post-zygotic isolating mechanisms?



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5. Define 'reproduction isolation ' and explain two types of reproductive isolation .



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6. Explain the terms analogous and homologous organs with examples.



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1. How the transmission of linked genes is different when present on homologous and non-homologous regions of sex chromosomes?



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2. Describe the structure of chromosomes with a suitable diagram.



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3. Describe the structure of sex chromosomes.



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4. A normal couple gives the birth to one haemophilic son and a normal daughter. Work out the cross to show the genotypes of parents and progeny.



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5. Explain the mechanism of sex determination in human being.



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6. Explain the mechanism of sex determination in human being.



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7. Explain the mechanism of Sex-determination in birds.



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8. With the help of a chart, explain the method of sex determination in honeybees.



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9. Drone of the honeybees shows haploid number of chromosomes. Illustrate.



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10. A carrier haemophilic female marries a normal male. What will be the phenotype of progeny?

Explain with suitable chart.



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11. Identify disorders developed in the given genotypes and give two symptoms of each :

(a) $44 +XO$ (b) $44 +XXY$



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12. Certain genes located on chromosome 11 and 16 were found to be faulty. This resulted in deficiency in synthesis of beta globin and alpha globin chains. What is the name of this disease? Give its two symptoms.



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13. Illustrate any three genes which can be used in gene therapy.



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14. Give any two unique features of acquired immunity.



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15. Describe the structure of antibody.



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16. Explain ABO blood group system in human being with a suitable chart.



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17. Attempt any TWO of the following :

Give the symptoms of typhoid fever and draw a

labelled diagram of its causal organism.



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18. Give any one adverse effect each of the following drugs on human health. 1. Opioids, 2. Cannabinoids and 3. Morphines on human health.



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1. Enlist various functions of blood.



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2. Describe the process of blood clotting.



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3. Coagulation of blood is an important mechanism. Explain its mechanism.

What will happen if a person's blood is deficient in Ca^+ ions?



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4. Describe various valves in the human heart.



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Ch 16 Excretion And Osmoregulation

1. Describe the structure of human excretory system with suitable diagram. Add a note on the process of urine formation.



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2. Describe the structure of a human kidney with the help of a labelled diagram.



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3. The special structure of urinary bladder helps to store about one litre of urine at a time. Describe this structure of urinary bladder and mention the difference in the length of urethra in man and woman. (Diagram not required)



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Ch 17 Control And Coordination

1. (a) Enlist the name and functions of two lobes of corpora quadrigemina.

(b) Give the functions of crura cerebri of mesencephalon.



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2. Define receptors. Enlist different types of receptors.



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3. (a) Name the sulcus which separates the following parts of cerebral hemisphere :

(i) Frontal and parietal lobe

(ii) Parietal and occipital lobe

(b) Which part of neuron is present in cerebral cortex and cerebral medulla?

(c) Name the area which controls voluntary activities of body.



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4. The diagram given alongside shows conduction of nerve impulse : (a) Name 'A' and 'B'. (b) Write the function of 'A'.



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5. With the help of a neat and labelled diagram, describe reflex arc.



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6. Describe T.S. of the spinal cord.



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7. Sketch and label T.S of Spinal cord.



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8. List the properties of hormones.



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9. What are the functional disorders of thyroid gland? Describe in brief.



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Ch 18 Human Reproduction

1. What are the different modes of asexual reproduction studied by you?



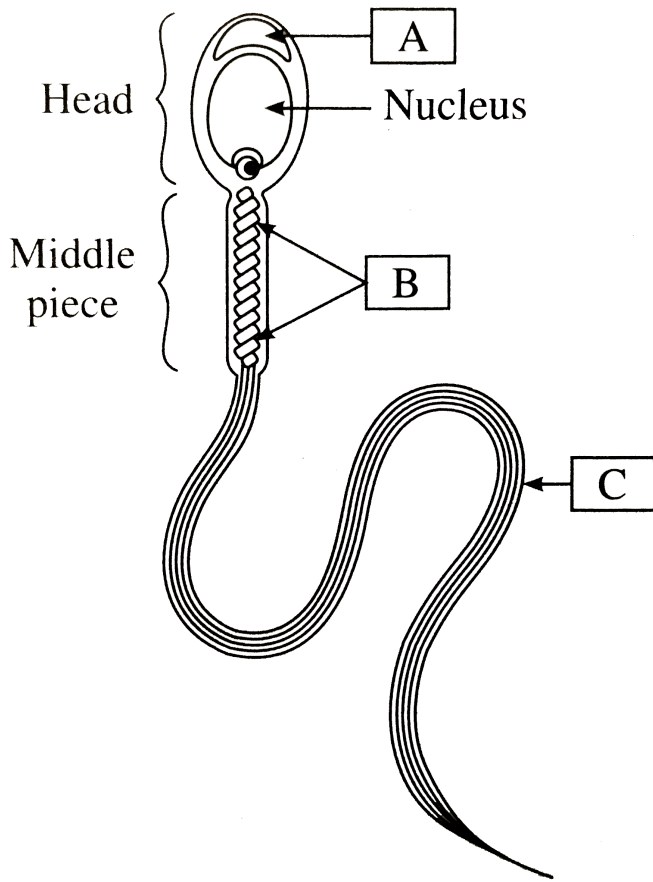
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2. Explain the development of ovum from an oogonium in a human female.



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3. Identify A, B, C in the given diagram and give their functions.



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4. Explain mechanical methods of birth control





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5. Enlist the methods of temporary and permanent birth control.



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6. Which is the method of temporary birth control that reduces the chances of pregnancy by 80%? Write the fact on which this method is based.



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Ch 19 Organisms And Environment li

1. Define parasitism and give any two types with suitable example of each.



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2. What are the effects of industrial water pollution on human health?



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3. Define pollution . " Industries are pouring poison in water" - Explain.



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4. Name the interaction in:

(a) Lichen (b) Sucker fish and shark (c) A protozoan living in the digestive tract of a flea living on dog.



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5. With the help of suitable diagrams, explain how the age structures determine the trend of population ?



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6. With the help of pyramid, describe the growing population.



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7. Describe steady population with the help of a pyramid.



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8. Describe diagrammatic representation of age structure showing declining population.



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9. Justify the following sentences :

(a) The conservation of endangered species of

plants and animals is necessary .

(b) Pollution Under Control (PUC) certificate is mandatory for all vehicles and industries .



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10. Give the effects of the air pollutants on human health.



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11. Describe the classification of species as given by IUCN.



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12. Causes of water pollution.



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Additional Important Questions For Self Practice

1. What is a cloning vector? Describe briefly the characteristics a cloning vector must possess.



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2. With the help of a labelled diagram, describe human excretory system.

How will you identify acute kidney injury by urine analysis?



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3. Describe the structure of human excretory system with suitable diagram. Add a note on the process of urine formation.



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4. Describe the glands associated with the male reproductive system .



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5. Explain the events in a normal woman during her menstrual cycle on the following days,.

(a) Ovarian event from 13-15 days

(b) Ovarian hormones level from 16 to 23 days

(c) Uterine events from 24 to 29 days



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6. Describe the process of Parturition in humans





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7. Describe a technique by which genetic disorders in the developing foetus can be detected.



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