



# BIOLOGY

## BOOKS - GURUKUL BOOKS & PACKAGING BIOLOGY (HINGLISH)

OCTOBER 2014

### Section I

1. Which one of the following is true pleiotropic gene ?

A.  $Hb^4$

B.  $Hb^S$

C.  $Hb^D$

D.  $Hb^P$

**Answer: A**



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**2. c-DNA means.....**

A. coiled DNA

B. cytoplasmic DNA

C. complementary DNA

D. circular DNA

**Answer: C**



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**3. Wheat variety 'Atlas 66' is improved for.....**

A. high proteins

B. high carbohydrates

C. high fats

D. high vitamins

**Answer: A**



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4. Erythromycin is obtained from .....

A. *pencillium chrysogenum*

B. *streptomyces griseus*

C. *gibberalla fujikuroi*

D. streptomyces erytherus

**Answer: D**



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5. Which one of the following is  $C_4$  plant ?

A. sunflower

B. soyabean

C. sugarcane

D. spinach

**Answer: C**



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**6.** The respiratory quotient (R.Q.) of carbohydrate is.....

A. 0.7

B. 1

C. 0.9

D. 0.1

**Answer: B**



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7. The depletion of ozone layer is due to:



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8. From which microorganism is vinegar obtained?



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9. The primary  $CO_2$  acceptor molecule during the  $C_3$  cycle is a



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10. What is fermentation ?



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11. What is bioaccumulation ?





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12. Which are the bacteria responsible for converting organic acids into methane?



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13. Which greenhouse gas is mainly responsible for global warming ?



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**14.** Give a neat and labelled sketch of the germinating angiospermic pollen grain.



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**15.** Explain different biosafety issues which may arise due to genetically modified (GM) organisms.



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**16.** What are gibberellins ? Give the applications of gibberellins.

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**17.** Describe the structure and function of ATP.

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**18.** Suggest measures to conserve the forests.

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



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**20.** Give the applications of PCR technique.



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



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**22.** Draw a labelled diagram of T.S. of a leaf showing Kranz anatomy.



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**23.** What is vegetative reproduction ? Describe any three natural methods of vegetative reproduction with examples.



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## Section II

**1.** Describe the cross between a homozygous tall round- seeded pea plant and a dwarf, wrinkled-seeded pea plant. What will be the

types of progeny in the  $F_2$  generation of this cross and in what proportion will it be?

Name and state the law which is explained by this example.



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2. In which type of isolation, two species living on different habitats are prevented from interbreeding

A. Seasonal isolation

B. Ethological isolation

C. Mechanical isolation

D. Habitat isolation

**Answer: C**



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**3.** Which of the following is the most appropriate choice as transgenic animal due to its short generation time?



A. pigs

B. Sheep

C. Mice

D. Cows

**Answer: C**



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**4. Which stage of silkworm secretes silk ?**

A. Caterpillar

B. Egg

C. Pupa

D. Adult

**Answer: A**



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5. Gemmule formation takes place in .....

A. Hydra

B. Spongilla

C. Planaria

D. Human being

**Answer: D**



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6. Which of the following hormones is responsible for regulating the blood sugar level in the human body ?

A. Insulin

B. Growth hormone

C. Oxytocin

D. Vasopressin

**Answer: A**



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7. The "Minamata " disease is caused by:

A. lead

B. arsenic

C. mercury

D. cadmium

**Answer: C**



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8. A mother of one year old daughter wanted to space her second child. Her doctor suggested CuT. Explain its contraceptive actions.



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**9.** Name 'the gas which caused the Bhopal gas tragedy in 1984.



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**10.** Mention the role of pacemaker in human heart.



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**11.** Give any 'two' modes of transmission of amoebiasis.



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**12.** What is a vaccine ? How do they act to provide long term immunity to an individual who is vaccinated ?



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**13.** Adaptive radiation.



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**14.** Sketch and label T. S. of human artery.



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**15.** Write a short note on Cro-magnon man



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**16.** Drone of the honeybees shows haploid number of chromosomes. Illustrate.



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**17. HUMAN GENOME PROJECT AND ITS GOALS**



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**18.** Give the economic importance of apiculture.



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**19.** Describe the structure of sex chromosomes.



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**20.** Write a note on HIV.



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**21.** How is radioactive waste management carried out ?



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**22.** Sketch and label formation of typical spinal nerve.



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**23.** 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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**24.** With the help of labelled diagrams, describe the structure of human sperm and unfertilised ovum. A couple is unable to conceive.

Which modern techniques are available to overcome this problem ?



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