



# BIOLOGY

## BOOKS - TRUEMAN BIOLOGY

### NCERT Exemplar Questions +2 (BIOTECHNOLOGY : PRINCIPLES AND PROCESSES )

**Mcqs**

1. Rising of dough is due to :

A. multiplication of yeast

B. production of  $CO_2$

C. emulsification

D. hydrolysis of wheat flour starch into  
sugars

**Answer: b**



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2. An enzyme catalysing the removal of nucleotides from the ends of DNA is

A. endonuclease

B. exonuclease

C. DNA ligase

D. Hind - II

**Answer: b**



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3. The transfer of genetic material from one bacterium to another through the mediation of a vector like virus is termed as :

A. 1)transduction

B. 2)conjugation

C. 3)transformation

D. 4)translation

**Answer: a**



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4. Which of the given statements is correct in the context of observing DNA separated by agarose gel electrophoresis ?

A. 1) DNA can be seen in visible light

B. 2) DNA can be seen without staining in visible light

C. 3) Ethidium bromide stained DNA can be seen in visible light

D. 4) Ethidium bromide stained DNA can be seen under exposure to UV light

**Answer: d**



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5. Restriction' in restriction enzyme refers to

A. cleaving of phosphodiester bond in DNA

by the enzyme

B. cutting of DNA at specific position only

C. prevention of the multiplication of bac-

teriophage in bacteria

D. all of the above

**Answer: c**



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**6.** A recombinant DNA molecule can be produced in the absence of the following :

A. Restriction endonuclease

B. DNA ligase

C. DNA fragments

D. E. coli

**Answer: d**



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7. In agarose gel electrophoresis, DNA molecules are separated on the basis of their

A. charge only

B. size only

C. charge to size ratio



D. all of the above

**Answer: b**



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**8.** The most important feature in a plasmid to be used as a vector is :

A. origin of replication (ori)

B. presence of a selectable marker

C. presence of sites for restriction endonuclease

D. its size

**Answer: a**



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**9. While isolating DNA from bacteria, which of the following enzymes is not used ?**

A. Lysozyme

B. R:bonuclease

C. Deoxyribonuclease

D. Protease

**Answer: c**



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**10.** Which of the following has popularised the PCR (polymerase chain reactions)?

A. Easy availability of DNA template

B. Availability of synthetic primers

C. Availability of cheap deoxyribonucleo -  
tides

D. Availability of 'Thermostable' DNA poly-  
merase

**Answer: d**



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11. An antibiotic resistance gene in a vector usually helps in the selection of :

- A. competent cells
- B. transformed cells
- C. recombinant cells
- D. none of the above

**Answer: b**



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12. Significance of 'heat shock' method in bacterial transformation is to facilitate

A. binding of DNA to the cell wall

B. uptake of DNA through membrane transport proteins

C. uptake of DNA through transient pores in the bacterial cell wall

D. expression of antibiotic resistance gene

**Answer: c**



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**13.** The role of DNA ligase in the construction of a recombinant DNA molecule is

A. formation of phosphodiester bond between two DNA fragments

B. formation of hydrogen bonds between sticky ends of DNA fragments

C. ligation of all purine and pyrimidine bases

D. none of the above

**Answer: a**



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**14.** Which of the following bacteria is not a source of restriction endonuclease?

A. *Haemophilus influenzae*

B. *Escherichia coli*

C. *Agrobacterium tumefaciens*

D. *Bacillus amyloli*



**Answer: c**



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**15. Which of the following steps are catalysed by Taq polymerase in a PCR reaction ?**

- A. Denaturation of template DNA
- B. Annealing of primers to template DNA
- C. Extension of primer end on the template DNA

D. All of the above

**Answer: c**



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**16.** A bacterial cell was transformed with a recombinant DNA that was generated using a human gene. However, the transformed cells did not produce the desired protein. Reason could be

- A. human gene may have intron which bacteria cannot process
- B. amino acid codons for humans and bacteria are different
- C. human protein is formed but degraded by bacteria
- D. all of the above

**Answer: a**



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17. Which of the following should be chosen for best yield if one were to produce a recombinant protein in large amounts ?

A. Laboratory flask of largest capacity

B. A stirred tank bioreactor without inlets and outlets

C. A continuous culture system

D. Any of the above

**Answer: c**



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**18.** Who among the following was awarded the Nobel Prize for the development of PCR technique ?

A. Herbert Boyer

B. Hargovind Khurana

C. Kary Mullis

D. Arthur Kornberg

**Answer: c**



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19. Which of the following statements does not hold true for restriction enzyme ?

- A. It recognises a palindromic nucleotide sequence
- B. It is an endonuclease
- C. It is isolated from viruses
- D. It produces the same kind of sticky ends in different DNA molecules

**Answer: c**



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