5C

[A-54]

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SARDAR PATEL UNIVERSITY
BACHELOR OF SCIENCE (B.SC.)
VITH SEMESTER EXAMINATION MARCH/APRIL - 2016
SATURDAY, 9TH APRIL 2016
02:30 PM TO 5:30 PM
SUBJECT: GENETICS
COURSE: US06CGEN06
(Biomedical Genetics)

TOTAL MARKS: 70

Figures to the right indicate marks:

Q1. Multiple Choice questions: **(1 x 10 = 10)**

i) Current treatment for cancer does not include:
(A) Chemotherapy (B) Radiotherapy (C) Surgery (D) Physiotherapy

ii) A cancer located in connective tissue is called:
(A) Carcinoma (B) Sarcoma (C) lymphoma (D) Leukemia

iii) Heteroduplex analysis involves:
(A) Denaturation (B) Fragmentation (C) solublisation (D) None of these

iv) Functional cloning is also known as?
(A) Forward genetics (B) Reverse genetics (C) Directed genetics (D) Both B & D

v) Non mendelian inheritance is shown by:
(A) Mitochondrial genes (B) Nuclear genes (C) chromosomal genes (D) Both A and C

vi) SSCP means:
(A) SSR conformation polymorphism (B) Single strand convulsion polymorphism
(C) Single smear conformation polymorphism (D) Single strand conformation polymorphism

vii) Which of these variant of PCR is used for simultaneous amplification of several loci?
(A) Temperate (B) Multiplex (C) Classical (D) Inverse

viii) A genetic disease can be cured by:
(A) Diet (B) Gene therapy (C) Antibiotics (D) All of these

ix) Which of these stem cells have potential to give rise to entire individual:
(A) Haematopoietic stem cell (B) Embroyonic stem cell
(C) Dental stem cell (D) Both A & C

x) Somatic cell gene therapy is :
(A) Heritable (B) Not heritable (C) Sometimes heritable (D) Both A and C

Q2. Short Answer type questions (Attempt any TEN) **(10 x 2 = 20 marks)**

A. What do you mean by metastasis?
B. Define chemotherapy and mention its two limitations
C. What is importance of protoncogenes?
D. Enumerate various strategies for detection of mutation.
E. Mention applications of multiplex PCR.
F. Enumerate various techniques for physical mapping.
G. What is forward genetics?
H. Mention the principle of chemical cleavage method.
I. Briefly explain candidate gene and its importance.
J. Define gene therapy and enumerate its types.
K. Define stem cells and mention their types.
L. What is substrate restriction diet-preventive therapy?

Please Turn Over

Q.3.A) Explain the components of chemotherapy in brief (05)

Q.3.B) Briefly explain various mechanisms responsible for malignant transformation. (05)

OR

Q.3.A) Write a short note on types of protoncogenes (05)

Q.3.B) Write a brief note on cancer and its progression. (05)

Q.4.A) Briefly explain functional cloning and its process. (05)

Q.4.B) Draw a flow chart of positional cloning approach. (05)

OR

Q.4.A) Write a short note on Physical mapping. (05)

Q.4.B) Give a comparative account of functional and positional cloning. (05)

Q.5.) Enumerate various strategies for detection of mutation or mutant gene. Explain any one these strategy in detail. (10)

OR

Q.5.A) Briefly explain Heteroduplex analysis and its significance. (05)

Q.5.B) Write a note on Multiplex PCR and its advantages. (05)

Q.6.A) Mention various strategies for the management of genetic diseases. (05)

Q.6.B) What are the main features of in-vivo and ex-vivo gene therapy. (05)

OR

Q.6.A) Write a short note on applications of stem cells. (05)

Q.6.B) Briefly explain genetic counselling its importance? (05)

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