KUMARAGURU college of technology
character is life

Register Number: …….

B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2016

(Regulation 2013)

Sixth Semester

BIOTECHNOLOGY

U13BTE202: Medical Biotechnology

Time: Three Hours Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Trisomy is represented as
   a) 2n+ 3 b) 2n+ 1
   c) 2n - 3 d) 2n - 1
2. Marfan syndrome (also called Marfan's syndrome) is a genetic disorder of _____.
3. Which of the following is / are an example of oncogenes?
   a) p53 b) Bcr-Abl
   c) Both a and b d) PBr2
4. Prader–Willi syndrome is due to the
5. Fragile X syndrome is an inherited condition characterized by an X chromosome that is abnormally susceptible to damage by
   a) Iron deficiency b) Folic acid deficiency
   c) Vitamin A deficiency d) Ascorbic acid deficiency
6. Doppler ultrasonography is used to study _____ .
7. Stem cell therapy is also known
   a) Cell therapy b) Gene therapy
   c) Regenerative medicine d) Cloning
8. Somatic gene therapy causes _____
9. DNA vaccines are composed of
   a) the antigen expression unit b) the production unit
   c) Both a and b d) Probe linker region
10. Antihaemophilic factor is encoded by

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11. Define bipolar disorder.
12. What are the symptoms of Marfan's syndrome?
13. Give the genetic basic of MELAS and MERRF syndromes.
14. How will you diagnose Angelman syndrome?
15. What is differential gene expression?
16. Write short notes on aminocentesis.
17. List Viral vectors used as carriers of genes for therapy.
18. Differentiate embryonic stem cells and adult stem cells.
19. What is humulin?
20. How are vaccines classified?

PART C (5 x 14 = 70 Marks)
(Answer not more than 400 words)

Q.No. 21 is Compulsory

21. Explain the methodology of gene therapy using an example.

22. (a) Classify the major types of chromosomal disorders. Explain trisomy and its manifestation.

(OR)

(b) Explain on PCR based diagnosis of diseases and add note on the limitations.

23. (a) (i) Write a notes on proto oncogenes. How are proto oncogenes converted to oncogenes? (10)

(ii) Relate p^{53} with the tumor suppression function. (4)

(OR)

(b) Explain genome imprinting and relate with onset of genetic diseases with a neat sketch. (10)

24. (a) Narrate the conventional methods of medical diagnostics and write advantages of molecular diagnostic methods. (14)

(OR)

(b) (i) Define Microarray Technology. (3)

(ii) Describe the construction of genomic and cDNA arrays and their application towards disease diagnosis. (11)

25. (a) (i) Define functional cloning. Explain it with an example. (8)

(ii) Explain the steps involved in erythropoietin production. (6)

(OR)

(b) (i) Give a detailed explanation on Vaccines, their types and application. (8)

(ii) Write note on therapentic applications of tPA and Interferon. (6)

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