M.E/M.TECH Degree Examination, December2020

BY18204 – RESEARCH AND RESEARCH METHODOLOGY IN BIOTECHNOLOGY

(Regulation 2018)

Time: Three hours Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. How biological replicates are performed for an experiment?
   a) By parallel measurements of biologically distinct samples that capture random biological variation
   b) By parallel measurements of biologically same samples that capture random biological variation
   c) By repeated measurements of the same sample that represent.
   d) None of above
2. Null hypothesis states that.
   a) that there is a relationship between the two variables being studied
   b) that there is no significant difference between specified populations, any observed difference being due to sampling or experimental error
   c) both a and b
   d) neither a nor b
3. Mention the importance of negative results.
   a) Negative results are important for the broader field where they are relevant, helping to interpret positive results that may have been obtained in related studies.
   b) If negative results are not reported, a nonproductive or flawed concept may continue to receive support from agencies
   c) The reporting of negative results can help other scientists adjust their research plans and increase their chances of success.
   d) All of above
4. Which is not true for plant breeders right?
   a) Plant Breeders' Rights are used to protect new varieties of plants that are distinguishable, uniform, and stable
   b) Plant Breeders' Rights is legally enforceable and gives you, the owner, exclusive rights to commercially use it, sell it, direct the production, sale, and distribution of it, and receive royalties from the sale of plants
   c) Plant Breeders' Rights falls under patent law
   d) All of the above

5 Why qualitative research is very important in biotech field?

6 State the significance of translational research during COVID-19 period.

7 Which website will authentically tell the H index?

8 Mention the criteria for patenting an invention.

PART B - (4 X16 = 64 marks)

9. (a) What are the important concepts relating to research design of vaccine design? Explain. **(16)**

(OR)

(b) Which types of research are very much essential to medical biotechnology? **(16)**

10. (a) Illustrate with two case studies on product-oriented biotechnology research in the healthcare sector. **(16)**

(OR)

(b) Analyze the interdisciplinary strategy required in biotech research. Explain two examples which require interdisciplinary approaches. **(16)**

11. (a) Describe experimental preparation and documenting of results of different kinds of Immunoassays involved. **(16)**

(OR)

(b) Discuss experimental research based on enzymatic analysis. **(16)**
Classify different types of biochemical tests, with benefits, drawbacks, and examples.

12. (a) In a standard biotechnology experiment, list the different elements and forms of analysis that are adopted. **(16)**

(OR)

(b) How to choose the biotechnology related sampling techniques? Justify the selection. **(16)**