FINAL EXAM
DECEMBER 2017

NATIONAL BOARD OF EXAMINATIONS

MICROBIOLOGY

PAPER – I

Time : 3 hours
Max. Marks : 100

MICRO/D/17/18/I

Important instructions:

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1. a) What constitutes bacterial adhesins? 2+4+4
   b) Describe how adhesins contribute to the pathogenesis/ virulence of microorganisms.
   c) Elaborate the role of adhesins in Chlamydial and Helicobacter pylori infections?

2. a) State the principle of q-PCR (Real time PCR). 3+3+4
   b) Name the methods of detection of amplification products in q-PCR.
   c) Mention the applications in clinical microbiology.

3. a) Name the different groups of β-lactam antibiotics. 4+4+2
   b) What is the molecular classification of β-lactamases?
   c) Give examples of β-lactamases commonly reported from India.

4. a) Name the methods of sterilization of heat sensitive articles and mention their principle. 7+3
   b) What are the indicators used for quality control of steam sterilizers?

5. a) Define Central Line Associated Blood Stream Infection (CLABSI). 2+4+4
   b) Enumerate the methods used for diagnosis of CLABSI.
   c) What steps can be taken for prevention of CLABSI?

6. a) Define laboratory accreditation. 3+4+3
   b) Name the methods used for quality control of culture media.
   c) What is proficiency testing and how does it differ from internal quality control?

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MICROBIOLOGY

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7.	a)	Define standard precautions in a health care setting.	3+4+3
	b)	What are the components of standard precautions?	
	c)	What additional components are required for prevention of air borne transmission of infections?	
8.	a)	Name the biosafety levels along with the class of agents that can be handled at each level.	5+5
	b)	Describe in detail the various 'good biosafety practices' to be followed in the laboratory.	
9.	a)	Define a humanized antibody and mention their method of production.	6+4
	b)	What are the clinical applications of humanized antibodies?	
10.	a)	Name the various techniques used for cytokine assays and mention principle of each.	7+3
	b)	What is the clinical application of cytokine assays?	

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