MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

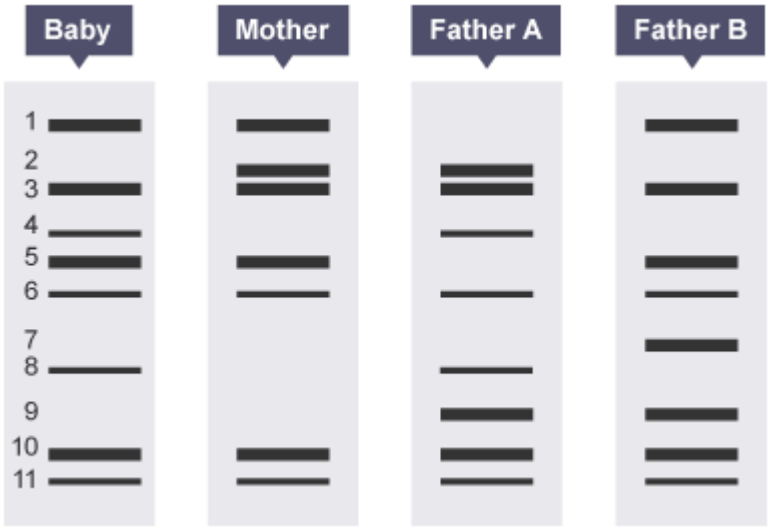
END SEMESTER B.TECH. **ONLINE** EXAMINATION JANUARY 2021

SUBJECT: HEALTH DIAGNOSTICS [BIO 4019]

Max. Marks: **50**

Instructions to Candidates:

- Answer ALL the questions & missing data may be suitable assumed

1A.	Discuss the scope and application of Health diagnostics in the diagnosis of immune disorders with a special focus to Biotechnology methods.	**5**
1B.	Give the impact of Chromosomal disorders on the public health at level of varied demography.	**5**
2A	Describe the process and practice of PCR based diagnostics by comparing PCR, PCR-SSCP and LCR in the diagnostics of sex chromosomal anomalies.	**5**
2B.	Given below is the genetic profiling data of the baby suffering with a rare genetic disorder. A mother has been married for the Father B after the divorce with Father A. Help them to identify the allele of the genetic disorder by your interpretations. 	**5**
3A.	Discuss about the diagnostic challenge associated with early diagnostics of Haemoglobinopathies.	**5**
3B.	Elaborate on: a) Malfunctioning of lysosomal enzymes b) Amyloidosis	**5**

4A.	Explain in detail about Human leukocyte antigen typing and its significance in finding the best match. Describe the adverse complications due to HLA mismatch.	**5**
4B.	Elaborate on the importance of Bioassays in the field of Drug discovery and Drug development.	**5**
5A.	Discuss the role of Signal amplification systems in immunocytochemical and immunohistochemical application with specific examples.	**5**
5B.	Analyze the given Case Report: Give your implications on the disease condition based on symptoms and Case history. Suggest a diagnostic method. A 34-year-old Italian female was referred to the Unit of the university hospital of Mussori, Mussori, Italy, in July 2002. She complained of thoracic pain during her stay in an immigrant reception center, without reporting fever, cough, or any clinically significant comorbidities. The physical examination showed enlarged, not movable, and tender latero-cervical lymph nodes, as well as crackles in the right emi-thorax. Chest X-ray showed a right middle lobe atelectasis and increased bronchovascular markings. Blood examinations showed a hemoglobin level of 10.6 g/dl (suspected hypochromic and microcytic anemia), a white blood cell count of 3,930 cells/mm3 (55% neutrophils, 25% lymphocytes, 15% monocytes, 2% eosinophils), and a platelet count of 311,000 cells/mm (Davies et al., 2008). C-reactive protein and erythrocyte sedimentation rate were elevated (6.24 mg/dl and 113 mm/h, respectively); gamma-globulins on electrophoresis were high but without any monoclonal spikes. His renal and liver function tests were within normal range. Total IgE were 4,820 IU/ml. Albumin level was below the normal values (4.00 g/dl).	**5**