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| **Examination question paper:**  | **July 2025** |

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| **Module code:****Component number:** | **BM7048****002** |
| **Module title:** | **Cancer Immunotherapy** |
| **Module leader:** | **Prof. Jameel M. Inal** |

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| **Date:** | **July 2025** |
| **Duration:** | **1 Hour 30 Minutes** |

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| **Exam type:** | **Seen, Closed** |
| **Materials supplied:** | **None** |
| **Materials permitted:** | **None** |
| **Warning:** | **Candidates are warned that possession of unauthorised materials in an examination is a serious assessment offence.** |

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| **Instructions to candidates:** | **Candidates will be required to answer all THREE questions** |
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|  | **Do not turn page over until instructed** |

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**Answer all THREE questions**

**Q1. In relation to antigen-specific T cell therapy explain in detail some of the problems that engineered T cells encounter in the immunosuppressive tumour microenvironment.**

**20 marks**

**Q2. With respect to DNA vaccination, explain some of the extracellular and intracellular barriers to delivery of DNA. Also explain how the use of a ‘nanoparticulate cancer vaccine,’ (so-called nanogel) may constitute a successful delivery system**.

 **20 marks**

**Q3. David Lyden’s seminal work reveals how exosomes derived from primary tumours may set up a pre-metastatic niche. With reference to this, discuss recent findings on the tumour microenvironment and cancer metastasis.**

 **20 marks**