

**Higher Specialist Diploma - Portfolio Essay Titles for Submission in 2021**

**Regulations**

* Two essays must be included in the portfolio as evidence of experiential learning. You can choose any two essay titles from either the 2020 or 2021 list of essay titles.
* Essays should be 3000 words (±10%) with a font size of at least 12 point.
* Candidates are expected to use appropriate material from various sources within the essay and these must be referenced in either the Harvard **or** Vancouver format.
* Candidates should note that all essays will be entered into the originality checking software system called Turnitin. This software produces a report that highlights not only how much text is similar to other sources but also where this material is located.

The similarity score that is produced as part of its Turnitin report requires the academic judgement of the examiners and the IBMS Head of Examinations to interpret whether this necessitates any action. Where plagiarism is detected, or if the similarity score is unacceptably high, it will be treated as academic malpractice and may have serious consequences. This could include the failure of the portfolio

**Important Points to Remember**

The completion of the two essays forms parts of the portfolio requirements for the HSD. These essays help candidates to demonstrate to the examiners that they have a comprehensive understanding of a specific field of biomedical science and knowledge and understanding of current issues and developments which are key learning outcomes of the HSD. At this level, you should be able to demonstrate:

* a systematic understanding of knowledge and a critical awareness of current problems, much of which is at, or informed by, work at the forefront of the academic discipline
* a comprehensive understanding of techniques applicable to their own research
* originality in the application of knowledge
* a conceptual understanding that enables critical evaluation of current research in their discipline

In constructing your essays you should:

* critically evaluate/discuss
* judge the relevance and significance of information
* evaluate claims, inferences, arguments and explanations
* construct clear and coherent arguments
* form well-reasoned judgements and decisions
* integrate and appraise reading and research
* be original in your application of knowledge

**HSD Essay Titles for 2021**

**Cellular Pathology**

Critically appraise the histological investigations employed in the study of muscle diseases within cellular pathology.

Debate the statement “Persistent inflammation is the cause of cancer.”

**Clinical Chemistry**

Critically evaluate the use of ‘tumour markers’ in the investigation of patients with cancers. Which ‘tumour’ marker do you consider to be the most effective?

**Key References**

* The Association for Clinical Biochemistry and Laboratory Medicine (2013) *Recommendations as a Result of the ACB Audit on Tumour Marker Service Provision.* Available at: <http://www.acb.org.uk/docs/default-source/guidelines/tumour-marker-guidelines.pdf?sfvrsn=4>
* Cristiano, S., Leal, A., Phallen, J. *et al.* (2019) *Genome-wide cell-free DNA fragmentation in patients with cancer*. Nature 570**,**385–389
* National Academy of Clinical Biochemistry (2009) *Use of Tumor Markers in Clinical Practice: Quality Requirements.* Available at <https://www.aacc.org/-/media/Files/Science-and-Practice/Practice-Guidelines/Tumor-Markers-Quality-Requirements/TumorMarkers_QualityRequirements09.pdf?la=en&hash=ABC1D9C9914407CC35914F344EABCFE7DEAE311D>
* National Cancer Institute (2019) *Tumor Markers in Common Use.* Available at: <https://www.cancer.gov/about-cancer/diagnosis-staging/diagnosis/tumor-markers-list>

Critically evaluate the impact of pre-analytical variables on biochemistry results.

**Key References**

* Krintus, M., Plebani, M. and Panteghini, M. (2017) *Improving clinical laboratory performance through quality indicators*. Clinical Biochemistry*,*50(10), pp. 547-549.
* Laura, S.*et al.*(2017) *Defining a roadmap for harmonizing quality indicators in Laboratory Medicine: a consensus statement on behalf of the IFCC Working Group “Laboratory Error and Patient Safety” and EFLM Task and Finish Group “Performance specifications for the extra-analytical phases”*. Clinical Chemistry and Laboratory Medicine (CCLM),55(10) pp. 1478-1488.

**Cytopathology**

Discuss the process that can be used to check and monitor the quality of Non-Gynaecological Cytology work.

Discuss cervical screening in a vaccinated population.

**Haematology**

Relate the pathogenesis of shortened red cell survival to the principles of laboratory methods for detection and diagnosis of its causative disorders.

Critically discuss the effects of pre-analytical variables on laboratory tests in haematology and the evaluate options for mitigating any such effects.

**Immunology**

Discuss the challenges surrounding the measurement of cryoproteins in the diagnostic laboratory.

Discuss current advances in the diagnosis and monitoring of lupus.

**Leadership and Management**

Peter Drucker stated that “management is doing things right and leadership is doing the right thing”. Respond to this statement in the context of a laboratory setting using examples and critically discuss potential positive and negative impacts of doing things right or doing the right thing.

Staff empowerment is increasingly seen as a critical management tool. Discuss what you feel are the implications for a departmental manager in an organisation which champions this concept.

**Medical Microbiology**

Review the role of *Fusobacterium necrophorum* as a cause of persistent and recurrent sore throat and the challenges associated with its laboratory diagnosis.

**Starting References:**

Ali SA, Kovatch KJ, Smith J, Bellile EL, Hanks JE, Hoff PT. Implication of *Fusobacterium necrophorum* in recurrence of peritonsillar abscess. *Laryngoscope*. 2019 Jul;129(7):1567-1571.

Batty A, Wren MW, Gal M. *Fusobacterium necrophorum* as the cause of recurrent sore throat: comparison of isolates from persistent sore throat syndrome and Lemièrre's disease. *J Infect* 2005;51:299-306.

Eaton C, Swindells J. The significance and epidemiology of *Fusobacterium necrophorum* in sore throats. *J Infect*. 2014 Aug;69(2):194-6.

Holm K, Bank S, Nielsen H, Kristensen LH, Prag J, Jensen A. The role of *Fusobacterium necrophorum* in pharyngotonsillitis - A review. *Anaerobe*. 2016 Dec;42:89-97.

Price SL, Hardy S, Gale P, Basten GP. Prevalence of *Fusobacterium necrophorum* in persistent sore throat samples. *Br J Biomed Sci*. 2011;68(4):209-10.

UK SMI 25 Identification of anaerobic Gram negative rods

Discuss the challenges in diagnosing prosthetic joint infections.

**Starting references:**

SMI B 44: Investigations of orthopaedic implants associated infections

Prosthetic Joint Infections. Clin Microbiol Rev. 2014 Apr; 27(2): 302-345 doi: 10.1128/CMR.00111-13

**Transfusion Science**

Discuss the reasons for conservation of O negative red cells. Critically evaluate the strategies that may be used to achieve this both locally and nationally and what you believe would be effective and why?

Describe the clinical features and underlying immunological basis of (i) immediate HTR and (ii) delayed HTR and the mechanisms to prevent them

**Virology**

Discuss the role of diagnostic and reference laboratory services in surveillance and control of infections with viruses of the genus *Enterovirus*

Criticallyreflect on national and international strategies for pandemic preparedness. Suggest one aspect of the plans which could be improved by stronger input from biomedical scientists.