

Written paper 1a – Long essays (90 minutes)

One compulsory clinical question and one management question with a choice out of two

1. Compare and contrast the strategies of prophylactic and pre-emptive therapy for CMV infection in solid organ transplant recipients.

2.

Write a business case to your laboratory manager to propose using nucleic acid detection to replace virus isolation for diagnosis of respiratory virus.

Or

Discuss how you would provide HIV testing services (excluding CD4 testing) for a teaching hospital that has a cohort of about 1,000 HIV infected patients as well as emergency, antenatal and occupational health services. State how these meet specifications given in current UK guidance.

Written Paper 1b - Short Answer questions (90 minutes) – Nine compulsory questions

1. A 37 year old woman presents to the Accident and Emergency Department with severe respiratory symptoms. She returned two days previously from Viet Nam. What advice would you give about her management?

2. Write short notes on the epidemiology, symptoms, diagnosis and treatment of chikungunya virus.

3. Discuss the laboratory investigation of immunity to measles, mumps and rubella virus.

4. Discuss the management of a 12 week pregnant woman in contact with her young son who developed a maculopapular rash two days ago.

5. A 57 year old man is admitted to hospital with severe headache, fever, confusion, becoming unconscious. Discuss the virological diagnosis and treatment you would recommend.

6. A 24 week pregnant woman presents to her GP with a two day history of severe chickenpox. What would you suggest for the management of this patient?

7. A 44 year old CMV antibody negative man is given a lung transplant from a CMV antibody positive donor. Discuss the ideal management of this case, and the likely outcome with and without interventional management.

8. A term baby is born with cerebral calcifications and chorioretinitis. His CMV IgM and Toxoplasma gondii IgM results on a clotted blood taken two days after birth are negative. Does this exclude infection with these two organisms and what management would you recommend?

9. A 39 year old man who had a living unrelated bone marrow transplant 4 weeks ago is admitted to hospital with severe respiratory symptoms. Adenovirus DNA is detected by PCR in a BAL. What advice would you give on the management of the patient?

Written paper 2 – critical review of published papers (120 minutes)

Select two published papers out of three

Paper 1

McLean HQ et al. Impact of repeated vaccination on vaccine effectiveness against influenza A(H3N2) and B during 8 seasons. Clin Infect Dis. 2014 Nov 15;59(10):1375-85.

- a) What research designs were used in this study? How were subjects recruited?
- b) What are the advantages of this study over other studies?
- c) What are the potential limitations and possible confounding factors in this study?
- d) Explain in your own words the doctrine of the original antigenic sin. How would this doctrine explain the finding of this paper?
- e) Explain how you would design another study to confirm the findings of this paper

Paper 2

Hewitt PE et al. Hepatitis E virus in blood components: a prevalence and transmission study in southeast England. Lancet. 2014 Nov 15;384(9956):1766-73.

- a) Explain the principle of testing by minipools. What are the advantages and disadvantages of testing by minipools? How are the sizes of minipools determined?
- b) What factors affect the transmission of hepatitis E virus from a viraemic blood donor?
- c) Based on the data from this paper, is it justified to introduce blood donor screening for hepatitis E virus? Explain the arguments, both for and against.
- d) If blood donor screening for hepatitis E is to be introduced to the UK, what method should be used?
- e) If blood donor screening is not to be introduced to the UK, what other strategies should be used to mitigate the risk of transfusion-transmitted hepatitis E?

Paper 3

Kimberlin DW et al. Valganciclovir for symptomatic congenital cytomegalovirus disease. N Engl J Med. 2015 Mar 5;372(10):933-43.

- a) There are 700,000 live births in England and Wales per year. What is the burden of congenital CMV infection and its complication?
- b) What were the recruitment criteria in this study? Would there be any possibility of recruitment bias?
- c) What were the long-term benefits of 6 month of valganciclovir treatment to symptomatic newborns with congenital CMV infection compare with 6 weeks of treatment? Are there any cautions before accepting these findings?
- d) Was CMV viral load an important determinant of outcome? Suggest a reason why this is the case?
- e) To what patient groups is the finding of this paper not applicable?