



**Higher Specialist Diploma**

**Virology**

**Examination 2019**

**Paper 3**

Discipline-specific questions

120 minutes

**Attempt 3 out of 6 questions**

Instructions to candidates

1. Record your candidate number, qualification title and where appropriate the discipline and examination paper number on the front sheet of the answer booklet
2. Record your candidate number and the page number in the spaces provided on the answer sheets
3. Begin each new answer on a new page
4. Write on one side of the answer sheet only
5. Each question is worth 100 marks

1. Discuss how emerging technologies can be used to characterise unknown viral causes of infection.
2. Critically discuss the value of introducing a syndromic diagnostics service.
3. Vaccination against Human Papilloma virus (HPV) was introduced in the UK in 2008. Critically evaluate its effect.
4. Since 2014, Egypt have been implementing a policy of offering Hepatitis C testing to the whole population and treating all found to be infected with the virus. Discuss the reasons for this and whether a similar scheme it would be cost effective in the UK.
5. You have been asked to improve the service that your department provides to a local travel clinic. Discuss how you would ensure that the service meets the needs of the users, protocols for sampling testing and clinical advice and how you might promote the service.
6. Your Pathology Services Manager has suggested that it would be more efficient if microbial serology was performed on the analysers within the Blood Sciences department. Discuss the relative advantages and disadvantages of moving to this arrangement.



**Higher Specialist Diploma**

**Virology**

**Examination 2019**

**Paper 4**

Case studies

120 minutes

**Attempt all case studies**

Instructions to candidates

1. Record your candidate number, qualification title and where appropriate the discipline and examination paper number on the front sheet of the answer booklet
2. Record your candidate number and the page number in the spaces provided on the answer sheets
3. Begin each new answer on a new page
4. Write on one side of the answer sheet only
5. Each case study is worth 100 marks.

## Seen Case Study

1.

A 24 year old male presents to Accident and Emergency department of his local hospital 5 days after return from a backpacking holiday around Southeast Asia. He has travelled extensively through Thailand, Cambodia and Laos including both urban and rural areas for the preceding month. His symptoms are myalgia, headache, nausea and an extensive erythematous rash. He has had one episode of diarrhoea (non-bloody).

On examination his temperature is 38.7°C. He is mildly tachycardic (110bpm) and clinically dehydrated. He has an extensive maculopapular rash over his torso, legs and arms. Otherwise examination is unremarkable and there is no hepatosplenomegaly.

He has an initial panel of routine blood tests taken. The results as are follows:

Haemoglobin	140g/L	Normal range 130-180g/L
White Cell Count	$1.5 \times 10^9/L$	Normal range $4-11 \times 10^9/L$
Platelet count	$60 \times 10^9/L$	Normal range $150-400 \times 10^9/L$
CRP	89mg/L	Normal range <5 mg/L
ALT	110U/L	Normal range <59 U/L
Creatinine	110umol/L	Normal range 58-110 umol/L

Blood film negative for Malaria parasites and rapid malaria antigen test negative.

- a. Comment on these results and what they might indicate. (20 marks)
  
- b. What viral conditions would you consider testing for? Give your reasons for each suggestion? (20 marks)
  
- c. What additional information from the history might you ask for from this patient and why? (15 marks)
  
- d. How could infection with each of the viruses you have listed in part a) be confirmed? (30 marks)
  
- e. What initial advice would you give regarding the management of this patient? (15 marks)

## Unseen

2.

Mr AD is a 36 year old primary school teacher who has presented with a history of pyrexia and sore throat for the previous 2 days. The GP sent clotted blood samples to the virology department for investigations because Mr AD also has a “rash”. He is concerned because his wife is 11 weeks pregnant with their first child.

- a. Which viral infections would you test for and why? (20 marks)

Taking local epidemiological information into consideration, the consultant virologist contacts the GP to clarify the nature of Mr AD’s “rash”. It transpires that it is a maculopapular rash on palms of the hands and soles of the foot.

- b. What infection does this indicate, which viruses is it associated with and how would you determine the causative agent? (40 marks)
- c. What advice should Mr AD be given about the likely course of his illness and possible treatment? (20 marks)
- d. Should Mrs D be investigated for this infection? Justify your answer. (20 marks)

3.

JM is a 6 year old boy who has been seen in paediatric outpatients for investigations into unilateral sensorineural hearing loss which has become obvious during the last two months. The paediatrician would like to investigate a possible viral cause for this clinical presentation.

- a. Which virus (es) could be implicated in JM’s hearing loss? Justify your answer. (20 marks)
- b. How could infection with each of the viruses listed in part ‘a’ be confirmed? (20 marks)

JM is otherwise healthy, achieving satisfactorily on his developmental milestones. Until the difficulties with hearing developed, he had settled well at school. There is no history of clinically apparent infections in the last 3-4 months. Therefore, this could be delayed presentation of a congenital infection. The paediatrician requests tests for congenital Cytomegalovirus infection.

- c. Discuss how the possible diagnosis of late onset sensorineural hearing loss due to congenital cytomegalovirus infection could be investigated. (40 marks)
- d. How should JM’s condition be managed and what is his prognosis? (20 marks)