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प्रश्न-पुस्तिका संख्या व बारकोड /  
Question Booklet No. & Barcode

MPA-25

इस प्रश्न-पुस्तिका को तब तक न खोलें जब तक  
कहा न जाए। Do not open this Question  
Booklet until you are asked to do so.

पुस्तिका में पृष्ठों की संख्या : 16  
Number of Pages in Booklet : 16  
पुस्तिका में प्रश्नों की संख्या : 150  
No. of Questions in Booklet : 150

Paper Code : 69

Sub : Virology

समय : 02:30 घण्टे + 10 मिनट अतिरिक्त\*  
Time : 02:30 Hours + 10 Minutes Extra\*

Exam Date 3/7/2025

अधिकतम अंक : 150

Maximum Marks : 150



प्रश्न-पुस्तिका के पेपर की सील/पोलिथीन बैग को खोलने पर प्रश्न-पत्र हल करने से पूर्व परीक्षार्थी यह सुनिश्चित कर लें कि :

- प्रश्न-पुस्तिका संख्या तथा ओ.एम.आर. उत्तर-पत्रक पर अंकित बारकोड संख्या समान हैं।
- प्रश्न-पुस्तिका एवं ओ.एम.आर. उत्तर-पत्रक के सभी पृष्ठ व सभी प्रश्न सही मुद्रित हैं। समस्त प्रश्न, जैसा कि ऊपर वर्णित है, उपलब्ध हैं तथा कोई भी पृष्ठ कम नहीं है / मुद्रण त्रुटि नहीं है। किसी भी प्रकार की विसंगति या दोषपूर्ण होने पर परीक्षार्थी वीक्षक से दूसरा प्रश्न-पत्र प्राप्त कर लें। यह सुनिश्चित करने की जिम्मेदारी अभ्यर्थी की होगी। परीक्षा प्रारम्भ होने के 5 मिनट पश्चात् ऐसे किसी दावे/आपत्ति पर कोई विचार नहीं किया जायेगा।
- On opening the paper seal/polythene bag of the Question Booklet before attempting the question paper, the candidate should ensure that :
  - Question Booklet Number and Barcode Number of OMR Answer Sheet are same.
  - All pages & Questions of Question Booklet and OMR Answer Sheet are properly printed. All questions as mentioned above are available and no page is missing/misprinted.
- If there is any discrepancy/defect, candidate must obtain another Question Booklet from Invigilator. Candidate himself shall be responsible for ensuring this. No claim/objection in this regard will be entertained after five minutes of start of examination.

### परीक्षार्थियों के लिए निर्देश

1. प्रत्येक प्रश्न के लिये एक विकल्प भरना अनिवार्य है।
2. सभी प्रश्नों के अंक समान हैं।
3. प्रत्येक प्रश्न का मात्र एक ही उत्तर दीजिए। एक से अधिक उत्तर देने की दशा में प्रश्न के उत्तर को गलत माना जाएगा।
4. OMR उत्तर-पत्रक इस प्रश्न-पुस्तिका के अन्दर रखा है। जब आपको प्रश्न-पुस्तिका खोलने को कहा जाए, तो उत्तर-पत्रक निकाल कर ध्यान से केवल नीले बॉल पॉइंट पेन से विवरण भरें।
5. कृपया अपना रोल नम्बर ओ.एम.आर. उत्तर-पत्रक पर सावधानीपूर्वक सही भरें। गलत रोल नम्बर भरने पर परीक्षार्थी स्वयं उत्तरदायी होगा।
6. ओ.एम.आर. उत्तर-पत्रक में करेक्शन पेन/व्हाईटनर/सफेदा का उपयोग निषिद्ध है।
7. प्रत्येक गलत उत्तर के लिए प्रश्न अंक का 1/3 भाग काटा जायेगा। गलत उत्तर से तात्पर्य अशुद्ध उत्तर अथवा किसी भी प्रश्न के एक से अधिक उत्तर से है।
8. प्रत्येक प्रश्न के पाँच विकल्प दिये गये हैं, जिनमें क्रमशः 1, 2, 3, 4, 5 अंकित किया गया है। अभ्यर्थी को सही उत्तर निर्दिष्ट करते हुए उनमें से केवल एक गोले (बबल) को उत्तर-पत्रक पर नीले बॉल पॉइंट पेन से गहरा करना है।
9. यदि आप प्रश्न का उत्तर नहीं देना चाहते हैं तो उत्तर-पत्रक में पाँचवें (5) विकल्प को गहरा करें। यदि पाँच में से कोई भी गोला गहरा नहीं किया जाता है, तो ऐसे प्रश्न के लिये प्रश्न अंक का 1/3 भाग काटा जायेगा।
- 10.\* प्रश्न-पत्र हल करने के उपरांत अभ्यर्थी अनिवार्य रूप से ओ.एम.आर. उत्तर-पत्रक जाँच लें कि समस्त प्रश्नों के लिये एक विकल्प (गोला) भर दिया गया है। इसके लिये ही निर्धारित समय से 10 मिनट का अतिरिक्त समय दिया गया है।
11. यदि अभ्यर्थी 10% से अधिक प्रश्नों में पाँच विकल्पों में से कोई भी विकल्प अंकित नहीं करता है तो उसको अयोग्य माना जायेगा।
12. मोबाइल फोन अथवा अन्य किसी इलेक्ट्रॉनिक यंत्र का परीक्षा हॉल में प्रयोग पूर्णतया वर्जित है। यदि किसी अभ्यर्थी के पास ऐसी कोई वर्जित सामग्री मिलती है तो उसके विरुद्ध आयोग द्वारा नियमानुसार कार्यवाही की जायेगी।

चेतावनी : अगर कोई अभ्यर्थी नकल करते पकड़ा जाता है या उसके पास से कोई अनधिकृत सामग्री पाई जाती है, तो उस अभ्यर्थी के विरुद्ध पुलिस में प्राथमिकी दर्ज कराते हुए राजस्थान सार्वजनिक परीक्षा (भर्ती में अनुचित साधनों की रोकथाम अध्याय) अधिनियम, 2022 तथा अन्य प्रभावी कानून एवं आयोग के नियमों-प्रावधानों के तहत कार्यवाही की जाएगी। साथ ही आयोग ऐसे अभ्यर्थी को भविष्य में होने वाली आयोग की समस्त परीक्षाओं से विवर्जित कर सकता है।

### INSTRUCTIONS FOR CANDIDATES

1. It is mandatory to fill one option for each question.
2. All questions carry equal marks.
3. Only one answer is to be given for each question. If more than one answers are marked, it would be treated as wrong answer.
4. The OMR Answer Sheet is inside this Question Booklet. When you are directed to open the Question Booklet, take out the Answer Sheet and fill in the particulars carefully with Blue Ball Point Pen only.
5. Please correctly fill your Roll Number in OMR Answer Sheet. Candidates will themselves be responsible for filling wrong Roll No.
6. Use of Correction Pen/Whitener in the OMR Answer Sheet is strictly forbidden.
7. 1/3 part of the mark(s) of each question will be deducted for each wrong answer. A wrong answer means an incorrect answer or more than one answers for any question.
8. Each question has five options marked as 1, 2, 3, 4, 5. You have to darken only one circle (bubble) indicating the correct answer on the Answer Sheet using BLUE BALL POINT PEN.
9. If you are not attempting a question then you have to darken the circle '5'. If none of the five circles is darkened, one third (1/3) part of the marks of question shall be deducted.
- 10.\* After solving question paper, candidate must ascertain that he/she has darkened one of the circles (bubbles) for each of the questions. Extra time of 10 minutes beyond scheduled time, is provided for this.
11. A candidate who has not darkened any of the five circles in more than 10% questions shall be disqualified.
12. Mobile Phone or any other electronic gadget in the examination hall is strictly prohibited. A candidate found with any of such objectionable material with him/her will be strictly dealt with as per rules.

Warning : If a candidate is found copying or if any unauthorized material is found in his/her possession, F.I.R. would be lodged against him/her in the Police Station and he/she would be liable to be prosecuted under Rajasthan Public Examination (Measures for Prevention of Unfair means in Recruitment) Act, 2022 & any other laws applicable and Commission's Rules-Regulations. Commission may also debar him/her permanently from all future examinations.

उत्तर-पत्रक में दो प्रतियाँ हैं - मूल प्रति और कार्बन प्रति। परीक्षा समाप्ति पर परीक्षा कक्ष छोड़ने से पूर्व परीक्षार्थी उत्तर-पत्रक की दोनों प्रतियाँ वीक्षक को सौंपेंगे, परीक्षार्थी स्वयं कार्बन प्रति अलग नहीं करें। वीक्षक उत्तर-पत्रक की मूल प्रति को अपने पास जमा कर, कार्बन प्रति को मूल प्रति से कट लाइन से मोड़ कर सावधानीपूर्वक अलग कर परीक्षार्थी को सौंपेंगे, जिसे परीक्षार्थी अपने साथ ले जायेंगे। परीक्षार्थी को उत्तर-पत्रक की कार्बन प्रति चयन प्रक्रिया पूर्ण होने तक सुरक्षित रखनी होगी एवं आयोग द्वारा माँगे जाने पर प्रस्तुत करनी होगी।



1. Which of the following best describes External Quality Assessment (EQA)?
- (1) Testing only control samples internally
  - (2) Participation in proficiency testing by external bodies
  - (3) Recording patient results
  - (4) Daily validation of test kits
  - (5) Question not attempted
2. What is the main goal of an Internal Audit in a virology lab?
- (1) Perform viral load testing
  - (2) Verify compliance with established procedures
  - (3) Develop new diagnostic tests
  - (4) Certify external laboratories
  - (5) Question not attempted
3. Which international standard is commonly required for accreditation of medical laboratories, including virology labs?
- (1) ISO 14001
  - (2) ISO 15189
  - (3) ISO 9001
  - (4) ISO 13485
  - (5) Question not attempted
4. A 53 year old woman develops fever and focal neurologic signs. Magnetic resonance imaging shows a left temporal lobe lesion. Which of the following tests would be most appropriate to confirm a diagnosis of herpes simplex encephalitis in this patient?
- (1) Brain biopsy
  - (2) Tzanck smear
  - (3) PCR assay for viral DNA in cerebrospinal fluid
  - (4) Serologic test for viral IgM antibody
  - (5) Question not attempted
5. Multinucleated giant cells in a Tzanck smear are associated with which of the following viruses?
- (1) Varicella-zoster
  - (2) Variola major
  - (3) Coxsackievirus
  - (4) Molluscum contagiosum
  - (5) Question not attempted
6. A 36-year-old nurse is found to be both HBsAg positive and HBeAg positive. The nurse most likely
- (1) Has acute hepatitis and is infectious
  - (2) Has both HBV and HEV infections
  - (3) Has a chronic HBV infection
  - (4) Has cleared a past HBV infection
  - (5) Question not attempted
7. Which of the following serologic patterns is suggestive of a patient with chronic hepatitis B with a pre-core mutation?
- (1) HBsAg positive, HBsAb negative, anti-HBc positive, HBeAg positive, HBV DNA positive
  - (2) HBsAg negative, HBsAb negative, anti-HBc positive, HBeAg positive, HBV DNA positive
  - (3) HBsAg positive, HBsAb positive, anti-HBc positive, HBeAg negative, HBV DNA positive
  - (4) HBsAg negative, HBsAb positive, anti-HBc positive, HBeAg negative, HBV DNA negative
  - (5) Question not attempted
8. In Sanger sequencing, which modified nucleotide is crucial for chain termination?
- (1) dNTP
  - (2) ddNTP
  - (3) rNTP
  - (4) ATP
  - (5) Question not attempted
9. Which of the following cell lines can support the growth of polio viruses?
- (1) Monkey kidney
  - (2) Human amnion
  - (3) HeLa
  - (4) All of these
  - (5) Question not attempted



10. Which of the following viruses results in production of intranuclear as well as intracytoplasmic inclusion bodies ?  
 (1) Cytomegalovirus  
 (2) Herpes simplex virus types 1 and 2  
 (3) Varicella-zoster virus  
 (4) Molluscipoxvirus  
 (5) Question not attempted
11. What is detected during pyrosequencing instead of fluorescence ?  
 (1) Light produced by Luciferase reaction  
 (2) Radioactive decay  
 (3) Fluorochrome binding  
 (4) Acoustic waves  
 (5) Question not attempted
12. Which technology uses nanopore-based single molecule sequencing for viral genomes ?  
 (1) Sanger sequencing  
 (2) NGS (Illumina)  
 (3) Oxford nanopore sequencing  
 (4) qRT-PCR  
 (5) Question not attempted
13. Syncytia in HEp-2 cell line is characteristic feature of  
 (1) RSV (2) CMV  
 (3) VZV (4) EBV  
 (5) Question not attempted
14. Which of the following is the method of choice for the diagnosis of hepatitis A virus infection ?  
 (1) Aminotransferase levels  
 (2) Detection of fecal HAV by immunoelectron microscopy  
 (3) Detection of IgG anti-HAV by ELISA  
 (4) Detection of IgM anti-HAV by ELISA  
 (5) Question not attempted
15. Which of the following serological markers is/are positive in super carriers of hepatitis B ?  
 (1) HBeAg  
 (2) HBsAg  
 (3) DNA polymerase  
 (4) All of these  
 (5) Question not attempted
16. Which of the following best describes Whole Genome Sequencing ?  
 (1) Sequencing coding regions only  
 (2) Sequencing mitochondrial DNA only  
 (3) Sequencing the entire DNA content including noncoding regions  
 (4) Sequencing RNA  
 (5) Question not attempted
17. Negri bodies can be seen in which part of the brain ?  
 (1) Cerebrum  
 (2) Brainstem  
 (3) Hippocampus  
 (4) Corpus collosum  
 (5) Question not attempted
18. Which adeno virus protein serves as primer of initiation of viral DNA synthesis ?  
 (1) Fiber (2) Hexon  
 (3) Penton (4) Terminal protein  
 (5) Question not attempted
19. 'Owl's eye' appearance is a hallmark finding of :  
 (1) Herpes simplex virus-2  
 (2) CMV  
 (3) EBV  
 (4) Pox virus  
 (5) Question not attempted
20. Which viral infection is characterized by the presence of Guarnieri bodies ?  
 (1) Rabies virus infection  
 (2) Polio virus infection  
 (3) Vaccinia virus infection  
 (4) Herpes virus infection  
 (5) Question not attempted
21. Which HIV testing strategy is used for HIV sentinel surveillance ?  
 (1) I (2) II A  
 (3) II B (4) III  
 (5) Question not attempted
22. Which viral disease is characterized by the presence of Bolinger bodies ?  
 (1) Fowlpox (2) Rabies  
 (3) Polio (4) Measles  
 (5) Question not attempted



23. Which of the following virus has the characteristic feature of Cytoplasmic vacuolation ?
- (1) Herpes virus
  - (2) SV40 virus
  - (3) Influenza virus
  - (4) Parainfluenza virus
  - (5) Question not attempted
24. There is usually a long period (clinical latency) between the time of primary HIV infection and the development of AIDS. During this period of latency –
- (1) HIV is not detectable in the plasma
  - (2) CD4 cell counts remain unchanged
  - (3) Virus replicates at a very low rate
  - (4) Virus is present in lymphoid organs
  - (5) Question not attempted
25. Which of the following is an example of primary cell line ?
- (1) WI-38
  - (2) HEp-2
  - (3) HeLa
  - (4) Monkey kidney cell line
  - (5) Question not attempted
26. The phage preparation that produces confluent lysis at highest dilution is called :
- (1) Routine test dose
  - (2) Prophage beta
  - (3) Eclipse phase
  - (4) Latent phase
  - (5) Question not attempted
27. The following virus shows minimal or no CPE and detected by Hemadsorption with Guinea pig RBC's
- (1) RSV
  - (2) Rhino virus
  - (3) Parainfluenza
  - (4) Mumps
  - (5) Question not attempted
28. The following virus shows CPE in human diploid fibroblast cells :  
CPE description : Discrete foci of rounded swollen, refractile cells; slowly involves entire monolayer and rate of growth is 5-28 days
- (1) Adeno virus
  - (2) Influenza and RSVCMV
  - (3) Varicella zoster
  - (4) Mumps
  - (5) Question not attempted
29. R-Mix cells is a rapid shell vial format used to detect the Respiratory viruses. This approach mixes
- (1) Human lung carcinoma and Mink lung cells
  - (2) Lung fibroblast Mv1Lu cells and Vero cell line
  - (3) HEK 293 and Vero cell line
  - (4) MDCK and Vero cell line
  - (5) Question not attempted
30. The "cart wheel" appearance, referring to the characteristic wheel-like morphology under an electron microscope, refers to which of the following virus ?
- (1) Corona
  - (2) Rota
  - (3) SARS
  - (4) Orbi
  - (5) Question not attempted
31. Human bocavirus is a newly discovered parvovirus. It has been detected most frequently in which of the samples ?
- (1) Urine
  - (2) Cord blood
  - (3) Respiratory secretions
  - (4) Bone marrow
  - (5) Question not attempted
32. Which of the viruses can be demonstrated by Seller's stain ?
- (1) Cytomegalovirus
  - (2) Rabies virus
  - (3) Measles virus
  - (4) Herpes virus
  - (5) Question not attempted



33. Tzanck smear Positive indicates :
- (1) Multinucleated giant cells with faceted nuclei in a homogenously stained smear (toluidine blue)
  - (2) Multinucleated giant cells with differentiating nuclear patterns (fluorescent stain)
  - (3) Uniformly stained smear with inclusion bodies (Giemsa stain)
  - (4) Ground glass appearance with abnormal cells (Gram stain)
  - (5) Question not attempted
34. The rapid shell vial assay allows the early detection of
- (1) HIV
  - (2) Rabies virus
  - (3) Respiratory viruses
  - (4) Cytomegaloviruses
  - (5) Question not attempted
35. What is the minimum antibody titre required for a positive Paul-Bunnell test, indicating glandular fever?
- (1) 20 IU/mL
  - (2) 100 IU/mL
  - (3) 800 IU/mL
  - (4) 1000 IU/mL
  - (5) Question not attempted
36. Which of the following viruses has the virions that can be seen under the compound microscope?
- (1) Pox virus
  - (2) Herpes virus
  - (3) Rabies virus
  - (4) Polio virus
  - (5) Question not attempted
37. Health care worker gets a needle prick while handling a known HIV seropositive patient. His serum was sent for testing after 15 days of exposure. What is the best testing method?
- (1) Western blot
  - (2) P24 capture assay
  - (3) RT-PCR
  - (4) Viral culture by co-cultivation
  - (5) Question not attempted
38. Which of the following is the common continuous cell line used for the virology diagnostic purpose?
- (1) Rhesus monkey lung cell culture
  - (2) Human amnion cell culture
  - (3) Human embryonic lung cell stain
  - (4) Human carcinoma of cervix cell line
  - (5) Question not attempted
39. Modified PCR used during syndromic approach is :
- (1) Nested PCR
  - (2) Multiplex PCR
  - (3) RT-PCR
  - (4) Uniplex PCR
  - (5) Question not attempted
40. Two rounds of amplification are involved in which modification of PCR?
- (1) Nested PCR
  - (2) Multiplex PCR
  - (3) RT-PCR
  - (4) Uniplex PCR
  - (5) Question not attempted
41. What is a key advantage of WGS compared to targeted sequencing approaches?
- (1) Lower cost
  - (2) Higher throughput per region
  - (3) Comprehensive detection of all genomic variations
  - (4) Simpler data analysis
  - (5) Question not attempted
42. Correct sequence in Polymerase chain reaction is :
- (1) Annealing → Denaturation → Extension of primer
  - (2) Annealing → Extension of primer → Denaturation
  - (3) Denaturation → Annealing → Extension of primer
  - (4) Denaturation → Extension of primer → Annealing
  - (5) Question not attempted
43. Northern blotting is done for :
- (1) Protein
  - (2) DNA
  - (3) RNA
  - (4) Antigen
  - (5) Question not attempted



44. Which of the following cavity in embryonated hen's egg is used for primary isolation of influenza viruses ?  
 (1) Amniotic cavity  
 (2) Allantoic cavity  
 (3) Yolk sac  
 (4) Air sac  
 (5) Question not attempted
45. Ct value in a Real-Time PCR means :  
 (1) Cutoff time  
 (2) Cutoff threshold  
 (3) Cycle time  
 (4) Cycle threshold  
 (5) Question not attempted
46. HHV-8 is associated with all, except :  
 (1) Kaposi sarcoma  
 (2) Adult T Cell leukemia  
 (3) Castleman's disease  
 (4) Primary effusion lymphoma  
 (5) Question not attempted
47. Nef gene in HIV is used for :  
 (1) Enhancing the expression of genes  
 (2) Enhancing viral replication  
 (3) Decreasing viral replication  
 (4) Maturation  
 (5) Question not attempted
48. Genetic reassortment is typically seen in :  
 (1) Herpes virus  
 (2) Hepadna virus  
 (3) Rota virus  
 (4) Astro virus  
 (5) Question not attempted
49. Reactivation of latent VZV leads to :  
 (1) Roseola  
 (2) Shingles (Herpes zoster)  
 (3) Mononucleosis  
 (4) Genital warts  
 (5) Question not attempted
50. Which human population is at highest risk for CMV retinitis ?  
 (1) Healthy adults  
 (2) Neonates  
 (3) AIDS patients  
 (4) Organ donors  
 (5) Question not attempted
51. Primary infection with HHV-6 typically causes which childhood illness ?  
 (1) Chickenpox  
 (2) Measles  
 (3) Roseola infantum  
 (4) Hand-foot-mouth disease  
 (5) Question not attempted
52. JC virus is the causative agent of which demyelinating disease ?  
 (1) Multiple sclerosis  
 (2) Progressive Multifocal Leukoencephalopathy (PML)  
 (3) Guillain-Barre syndrome  
 (4) Transverse myelitis  
 (5) Question not attempted
53. BK virus primarily causes disease in which organ ?  
 (1) Liver (2) Lungs  
 (3) Kidneys (4) Brain  
 (5) Question not attempted
54. Which viral infection is a major risk factor for bronchiolitis obliterans syndrome in lung transplant recipients ?  
 (1) Cytomegalovirus  
 (2) HSV-2  
 (3) Respiratory Syncytial Virus (RSV)  
 (4) Epstein-Barr virus  
 (5) Question not attempted
55. What type of genome does Togaviridae possess ?  
 (1) Double-stranded DNA  
 (2) Single-stranded positive-sense RNA  
 (3) Single-stranded negative-sense RNA  
 (4) Segmented RNA  
 (5) Question not attempted
56. True about Prions diseases are all except  
 (1) Myoclonus is seen in 10% of the patients  
 (2) Caused by infectious proteins  
 (3) Brain biopsy is diagnostic  
 (4) Manifest commonly as dementia  
 (5) Question not attempted



57. Choose the correct matching :

Column - A (Virus Family)	Column - B (Genome Feature)
------------------------------	--------------------------------

- |                     |                                       |
|---------------------|---------------------------------------|
| 1. Flaviviridae     | a. Positive-sense single-stranded RNA |
| 2. Orthomyxoviridae | b. Segmented negative-sense RNA       |
| 3. Coronaviridae    | c. Positive-sense single-stranded RNA |

Choose the correct matching :

- |     | 1                      | 2 | 3 |
|-----|------------------------|---|---|
| (1) | b                      | c | a |
| (2) | a                      | b | c |
| (3) | c                      | a | b |
| (4) | b                      | a | c |
| (5) | Question not attempted |   |   |

58. Zika virus is associated with :

- (1) Guillain-Barre Syndrome
- (2) Macrocephaly
- (3) Genital defects
- (4) Dysplasia
- (5) Question not attempted

59. Virus lacking hemagglutinin and neuraminidase but having membrane fusing protein is :

- (1) HSV (Herpes Simplex Virus)
- (2) RSV (Respiratory Syncytial Virus)
- (3) CMV (Cytomegalovirus)
- (4) EBV (Epstein-Barr Virus)
- (5) Question not attempted

60. Warthin Finkeldy cells are seen in :

- (1) Mumps
- (2) Measles
- (3) Rubella
- (4) Adeno virus
- (5) Question not attempted

61. Arena viruses are primarily transmitted to humans via :

- (1) Respiratory droplets
- (2) Mosquito bites
- (3) Contact with rodent excreta
- (4) Blood transfusions
- (5) Question not attempted

62. Which is the most important virulence factor enabling Paramyxoviruses to cause syncytia (multinucleated giant cells) ?

- (1) F protein
- (2) HA protein
- (3) NA protein
- (4) M protein
- (5) Question not attempted

63. Which protein forms the outer capsid of Rotavirus and is the target for neutralizing antibodies ?

- (1) VP4 and VP7
- (2) VP6
- (3) VP1
- (4) VP2
- (5) Question not attempted

64. Which is the most common clinical manifestation of Cocksackievirus A infection ?

- (1) Herpangina
- (2) Viral hepatitis
- (3) Hemorrhagic fever
- (4) Chickenpox
- (5) Question not attempted

65. Which of the following is the classic histological feature seen in rabies infection ?

- (1) Councilman bodies
- (2) Negri bodies
- (3) Guarnieri bodies
- (4) Owl's eye inclusion
- (5) Question not attempted

66. A 6-year old presents with a "slapped cheek" appearance and reticulated rash on arms. What is the likely cause ?

- (1) Measles virus
- (2) Parvovirus B19
- (3) Rubella virus
- (4) Varicella-zoster virus
- (5) Question not attempted

67. A 2-year-old develops a high fever followed by sudden onset of a pink maculopapular rash after defervescence. What is the likely diagnosis ?

- (1) Measles
- (2) Rubella
- (3) Roseola (HHV-6)
- (4) Scarlet fever
- (5) Question not attempted



68. A young adult presents with painful grouped vesicles on an erythematous base at the mucocutaneous junction of the lip. Likely diagnosis
- (1) Herpes simplex virus type 1
  - (2) Coxsackie virus A16
  - (3) Varicella-zoster virus
  - (4) HPV-6
  - (5) Question not attempted
69. A 3-year-old child presents with a barking cough, inspiratory stridor, and hoarseness. Which viral agent is most likely ?
- (1) Influenza virus
  - (2) Parainfluenza virus
  - (3) Respiratory Syncytial Virus (RSV)
  - (4) Adeno virus
  - (5) Question not attempted
70. A 1-year-old infant with wheezing, cough and respiratory distress during winter is likely infected by :
- (1) Rhino virus
  - (2) Influenza B virus
  - (3) Respiratory Syncytial Virus (RSV)
  - (4) Parainfluenza virus
  - (5) Question not attempted
71. A 6-year-old presents with conjunctivitis, sore throat and a dry hacking cough. Chest X-ray shows patchy infiltrates. Most likely virus
- (1) Adeno virus
  - (2) Influenza A virus
  - (3) Rhino virus
  - (4) Corona virus
  - (5) Question not attempted
72. During flu season, a previously healthy adult develops sudden onset fever, myalgia, sore throat and non-productive cough. Likely pathogen
- (1) Adeno virus
  - (2) Influenza virus
  - (3) RSV
  - (4) Corona virus OC43
  - (5) Question not attempted
73. Which virus is known to cause a rapidly progressive, fatal encephalitis following a long incubation period after an animal bite ?
- (1) Rabies virus
  - (2) Japanese encephalitis virus
  - (3) West Nile virus
  - (4) Herpes simplex virus
  - (5) Question not attempted
74. Which virus is classically associated with congenital CNS infection causing periventricular calcifications ?
- (1) Rubella virus
  - (2) CytoMegaloVirus (CMV)
  - (3) HSV-2
  - (4) Varicella-zoster virus
  - (5) Question not attempted
75. Infection with which virus is most commonly associated with Acute Flaccid Myelitis (AFM) ?
- (1) Influenza A virus
  - (2) Coxsackie virus A6
  - (3) Enterovirus D68
  - (4) Rabies virus
  - (5) Question not attempted



76. Which virus is primarily responsible for outbreaks of acute gastroenteritis on cruise ships ?  
 (1) Adeno virus (2) Noro virus  
 (3) Astro virus (4) Sapo virus  
 (5) Question not attempted
77. Rota virus primarily affects which segment of the gastrointestinal tract ?  
 (1) Stomach (2) Duodenum  
 (3) Jejunum (4) Ileum  
 (5) Question not attempted
78. Which of the following vaccines is used to prevent rota virus gastroenteritis in infants ?  
 (1) RotaTeq (2) Havrix  
 (3) Varivax (4) DTaP  
 (5) Question not attempted
79. Which virus, often affecting immuno compromised hosts, is associated with prolonged diarrhea and gastroenteritis ?  
 (1) Noro virus  
 (2) Rota virus  
 (3) Cytomegalovirus (CMV)  
 (4) Astro virus  
 (5) Question not attempted
80. Atypical lymphocytosis is most likely to be found in which of the following diseases ?  
 (1) Influenza virus  
 (2) Epstein-Barr Virus  
 (3) Parvovirus  
 (4) Leuconostoe  
 (5) Question not attempted
81. Which hepatitis virus is most commonly associated with chronic liver disease leading to cirrhosis and hepatocellular carcinoma ?  
 (1) Hepatitis A virus  
 (2) Hepatitis E virus  
 (3) Hepatitis C virus  
 (4) Hepatitis D virus  
 (5) Question not attempted
82. A corneal swab from a hydrophobic patient of suspected case of rabies is taken, choice of test to be performed from the following option is :  
 (1) Seller stain for Negri body  
 (2) Immunofluorescence  
 (3) RT-PCR  
 (4) RFFIT  
 (5) Question not attempted
83. Which vaccine is routinely recommended for prevention of Hepatitis B infection ?  
 (1) Inactivated virus vaccine  
 (2) Recombinant surface antigen vaccine  
 (3) Live attenuated vaccine  
 (4) Subunit core antigen vaccine  
 (5) Question not attempted
84. Which virus is the leading cause of morbidity and mortality in solid organ transplant recipients ?  
 (1) Herpes Simplex Virus (HSV)  
 (2) CytoMegalovirus (CMV)  
 (3) Epstein-Barr Virus (EBV)  
 (4) Varicella-Zoster Virus (VZV)  
 (5) Question not attempted
85. Post-Transplant Lymphoproliferative Disorder (PTLD) is most strongly associated with reactivation of which virus ?  
 (1) Herpes simplex virus  
 (2) Cytomegalovirus  
 (3) Epstein-Barr virus  
 (4) BK virus  
 (5) Question not attempted



86. Which virus-vaccine strain combination is not correct ?
- (1) Mumps – Jeryl-Lynn strain
  - (2) Measles – Edmonston-Zagreb strain
  - (3) Rubella – Schwarz strain
  - (4) Chickenpox – Oka strain
  - (5) Question not attempted
87. Ramsay-Hunt syndrome can be caused by
- (1) Herpes-Zoster virus
  - (2) Herpes-Simplex virus
  - (3) Cytomegalovirus
  - (4) Epstein-Barr virus
  - (5) Question not attempted
88. Which of the following produces cataract in neonates as congenital infection ?
- (1) Parvovirus B 19 virus
  - (2) Hepatitis A virus
  - (3) Hepatitis E virus
  - (4) Varicella zoster virus
  - (5) Question not attempted
89. Which of the following causes microcephaly in neonates due to congenital infection ?
- (1) Herpes simplex virus
  - (2) Hepatitis A virus
  - (3) Hepatitis E virus
  - (4) Zika virus
  - (5) Question not attempted
90. Which of the virus is causative agent of Hydrops fetalis ?
- (1) Parvovirus B 19 virus
  - (2) Hepatitis A virus
  - (3) Hepatitis E virus
  - (4) Varicella zoster virus
  - (5) Question not attempted
91. Which virus can cause both genital ulcers and neonatal encephalitis ?
- (1) Hepatitis C virus
  - (2) Herpes Simplex Virus (HSV)
  - (3) Cytomegalovirus
  - (4) Human Papillomavirus
  - (5) Question not attempted
92. Popular purpuric gloves and socks syndrome is caused by
- (1) Herpes simplex virus
  - (2) Poxvirus
  - (3) Parvovirus
  - (4) Cocksackievirus
  - (5) Question not attempted
93. Which virus is frequently co-infected in individuals with HIV due to shared transmission routes ?
- (1) EBV
  - (2) HSV-1
  - (3) Hepatitis C Virus
  - (4) Human T-Lymphotropic Virus (HTLV)
  - (5) Question not attempted
94. Which virus is most commonly associated with Epidemic KeratoConjunctivitis (EKC) ?
- (1) Herpes simplex virus
  - (2) Adeno virus
  - (3) Varicella-zoster virus
  - (4) Epstein-Barr virus
  - (5) Question not attempted
95. Which virus is responsible for Acute Retinal Necrosis (ARN) syndrome ?
- (1) Adeno virus
  - (2) Cytomegalovirus
  - (3) Herpes Simplex Virus (HSV)
  - (4) Epstein-Barr virus
  - (5) Question not attempted



96. Ocular manifestations such as cotton wool spots and retinal hemorrhages are seen in which viral infection in AIDS patients?
- (1) CMV retinitis
  - (2) HSV keratitis
  - (3) Adenoviral conjunctivitis
  - (4) VZV conjunctivitis
  - (5) Question not attempted
97. All are true about congenital Rubella except :
- (1) IgG persists for more than 6 months
  - (2) IgM antibody is present at birth
  - (3) Most common anomalies are hearing and heart defects
  - (4) Increased congenital malformation if infection after 16 weeks.
  - (5) Question not attempted
98. Which of the following virus causes the nasopharyngeal carcinoma?
- (1) Hepatitis B Virus
  - (2) Measles
  - (3) Epstein-Barr Virus
  - (4) Influenza
  - (5) Question not attempted
99. Forchheimer spots, characterized by pin-head sized petechiae on the soft palate and uvula, are observed in which of the following disease?
- (1) Measles
  - (2) Rubella
  - (3) Chickenpox
  - (4) Infectious mononucleosis
  - (5) Question not attempted
100. Which scientist termed HIV as Human T cell Lymphocyte Virus - 3 (HTLV-3)?
- (1) Gallo and colleagues
  - (2) Montagnier and colleagues
  - (3) Louis Pasteur
  - (4) Edward Jenner
  - (5) Question not attempted
101. Which of the following cell line is used for culture of HIV?
- (1) HeLa
  - (2) MDCK
  - (3) Vero
  - (4) Jurkat
  - (5) Question not attempted
102. Which of the following is not a function of HIV accessory protein Nef?
- (1) Apoptosis
  - (2) Downregulation of surface CD4
  - (3) Enhancement of virus infectivity
  - (4) Modulation of cellular activation pathway
  - (5) Question not attempted
103. Which of the following slow virus disease does not occur in humans?
- (1) Visna
  - (2) Kuru
  - (3) Creutzfeldt-Jakob disease
  - (4) Fatal familial insomnia
  - (5) Question not attempted
104. Prions are sensitive to which one of the following?
- (1) Heat at 90 °C
  - (2) UV rays
  - (3) Nucleases
  - (4) Proteases
  - (5) Question not attempted
105. Effective method to prevent hepatitis B infection in a neonate born to HBV infected mother is -
- (1) Hepatitis B immunoglobulin (Ig) immediately after birth
  - (2) Recombinant subunit vaccine within 12 hours of birth
  - (3) Combined immunization (Ig plus vaccine) within 12 hours of birth
  - (4) Start on tenofovir and telbivudine
  - (5) Question not attempted
106. Which virus caused the largest recorded hemorrhagic fever outbreak between 2014-2016?
- (1) Marburg virus
  - (2) Ebola virus
  - (3) Lassa virus
  - (4) Dengue virus
  - (5) Question not attempted



107. During a viral outbreak, the primary method for breaking the chain of transmission is :
- (1) Early mass vaccination
  - (2) Mass treatment of asymptomatic carriers
  - (3) Isolation of cases and quarantine of contacts
  - (4) Closure of public facilities
  - (5) Question not attempted
108. What is the critical  $R_0$  (basic reproductive number) threshold above which an outbreak can sustain itself ?
- (1) 0.5                      (2) 1
  - (3) 2                        (4) 5
  - (5) Question not attempted
109. Which WHO document provides standard outbreak investigation steps ?
- (1) International Health Regulations (IHR) 2005
  - (2) WHO Pandemic Plan 2010
  - (3) WHO Laboratory Manual 2013
  - (4) WHO Viral Outbreak Manual 2015
  - (5) Question not attempted
110. Which factor is considered the most significant drive of emerging viral infections ?
- (1) Natural viral mutations
  - (2) Climate change
  - (3) Human encroachment into wildlife habitats
  - (4) Increased vaccination rates
  - (5) Question not attempted
111. Which of the following is a re-emerging viral infection due to lapses in vaccination coverage ?
- (1) Smallpox              (2) Measles
  - (3) Ebola                 (4) Rabies
  - (5) Question not attempted
112. The novel corona virus (SARS-CoV-2) is thought to have originated from which animal reservoir ?
- (1) Bats                    (2) Pangolins
  - (3) Camels                (4) Birds
  - (5) Question not attempted
113. Which viral hemorrhagic fever re-emerged in Uganda after 20 years of absence in 2011 ?
- (1) Ebola Sudan virus
  - (2) Marburg virus
  - (3) Lassa virus
  - (4) Crimean-Congo hemorrhagic fever virus
  - (5) Question not attempted
114. Which type of study design is traditionally used in conventional epidemiology for outbreak investigations ?
- (1) Cross-sectional study
  - (2) Case-control study
  - (3) Randomized controlled trial
  - (4) Meta-analysis
  - (5) Question not attempted
115. Which of the following animals is/are responsible for transmission of filoviruses to human beings ?
- (1) Primates
  - (2) Rodents
  - (3) Poultry
  - (4) All of these
  - (5) Question not attempted
116. The term "molecular epidemiology" of viruses mainly refers to :
- (1) Studying virus transmission based only on clinical data
  - (2) Use of genetic information to track viral transmission and evolution
  - (3) Use of serological surveys only
  - (4) Chemical disinfection studies
  - (5) Question not attempted



117. Which measure quantifies the genetic relatedness between two viral isolates in molecular epidemiology ?

- (1) Phylogenetic distance
- (2) Odds ratio
- (3) Attack rate
- (4) Risk ratio
- (5) Question not attempted

118. Which Biosafety Level (BSL) is required for handling live Crimean Congo hemorrhagic fever virus in research laboratories ?

- (1) BSL-2 with enhanced precautions
- (2) BSL-3
- (3) BSL-4
- (4) BSL-1
- (5) Question not attempted

119. Which of the following viruses typically require BSL-4 containment for laboratory work ?

- (1) Dengue virus
- (2) Influenza A virus (H5N1)
- (3) Ebola virus
- (4) Zika virus
- (5) Question not attempted

120. While birds act as a natural reservoir, amplification of the following Flavivirus during the warm months results in the death of the bird's host, most commonly in crows, ravens and jays :

- (1) Dengue virus
- (2) St. Louis virus
- (3) Japanese encephalitis virus
- (4) West Nile virus
- (5) Question not attempted

121. Which principle is a cornerstone of biosecurity practices related to the handling of human pathogenic viruses ?

- (1) Risk minimization through strict public reporting
- (2) Personnel reliability programs to prevent insider threats
- (3) Regular mass public release of laboratory inventories
- (4) Exclusive reliance on physical barriers without training
- (5) Question not attempted

122. The principal vector of West Nile virus in North America is :

- (1) Aedes aegypti
- (2) Anopheles gambiae
- (3) Culex pipiens
- (4) Ixodes scapularis
- (5) Question not attempted

123. Which viral disease is transmitted by sandflies ?

- (1) Dengue
- (2) Zika
- (3) Rift Valley Fever
- (4) Toscana virus infection
- (5) Question not attempted

124. Which virus is mainly transmitted to humans by ticks ?

- (1) Japanese encephalitis virus
- (2) Powassan virus
- (3) Zika virus
- (4) Chikungunya virus
- (5) Question not attempted

125. Vertical transmission of viruses through vector eggs is well documented in :

- (1) Culex mosquitoes with West Nile virus
- (2) Aedes mosquitoes with Zika virus
- (3) Anopheles mosquitoes with HIV
- (4) Sandflies with Chikungunya virus
- (5) Question not attempted



126. Name a receptor-destroying enzyme :

- (1) Neuraminidase
- (2) Transcriptase
- (3) Reverse transcriptase
- (4) Hemagglutinin
- (5) Question not attempted

127. Virus quantification is done by :

- (1) Egg inoculation
- (2) Hemadsorption
- (3) Plaque assay
- (4) Electron microscopy
- (5) Question not attempted

128. Which of the following virus contains the double stranded linear RNA genome ?

- (1) Colorado tick fever virus
- (2) Human corona virus
- (3) Vesicular stomatitis virus
- (4) Ebola virus
- (5) Question not attempted

129. Which of the following virus contains dsDNA, non-enveloped icosahedral virions ?

- (1) CMV
- (2) Human JC virus
- (3) Human BK virus
- (4) Adeno virus
- (5) Question not attempted

130. Suckling mice is used for isolation of :

- (1) Coxsackie virus
- (2) Herpes virus
- (3) Pox
- (4) Adeno virus
- (5) Question not attempted

131. Which of the following has responsibility for the assignment of new viruses to specific groupings ?

- (1) ICC – International Committee Classification
- (2) ICTV – International Committee on Taxonomy of Virus
- (3) ITC – International Technical Committee
- (4) RCM – Regional Committee Classification Management
- (5) Question not attempted

132. Which of the following drug is a nucleoside analogue ?

- (1) Lamivudine (2) Oseltamivir
- (3) Ritonovir (4) Indinavir
- (5) Question not attempted

133. Which of the following is the best explanation for the selective action of acyclovir (acycloguanosine) in herpes virus infected cells ?

- (1) Acyclovir binds specifically to viral receptors only on the surface of the HSV-infected cells.
- (2) Acyclovir is phosphorylated by a virus-encoded phosphokinase only within HSV-infected cells.
- (3) Acyclovir selectively inhibits the RNA polymerase in the HSV virion.
- (4) Acyclovir specifically blocks the matrix protein of HSV, thereby preventing release of progeny HSV.
- (5) Question not attempted

134. Which of the following drugs is used in the treatment of Influenza A infection ?

- (1) Zidovudine
- (2) Oseltamivir
- (3) Ritonavir
- (4) Enfuvirtide
- (5) Question not attempted

135. Which of the following is not an RNA virus ?

- (1) Ebola
- (2) Simian 40
- (3) Rabies
- (4) Vesicular stomatitis virus
- (5) Question not attempted

136. Which of the following drug is a protease inhibitor ?

- (1) Oseltamivir (2) Nevirapine
- (3) Ganciclovir (4) Saquinavir
- (5) Question not attempted

137. Interferon gamma secreted by :

- (1) Activated T-cells
- (2) CD 8 cells
- (3) RBC
- (4) Neutrophils
- (5) Question not attempted



138. Which of the following viruses exists as circular episomal form during latent infection ?  
 (1) Rhino virus  
 (2) Herpes virus  
 (3) Polio virus  
 (4) Human immunodeficiency virus  
 (5) Question not attempted
139. H275Y mutation indicates drug resistance for which one of the viruses ?  
 (1) Influenza A H1N1  
 (2) HIV-1  
 (3) HBV  
 (4) HCV  
 (5) Question not attempted
140. Which virus interacts with M cells over the Peyer's patch to establish infection in the body ?  
 (1) Influenza virus  
 (2) Reo virus  
 (3) Herpes virus  
 (4) Corona virus  
 (5) Question not attempted
141. Which of the following vector is responsible for transmission of Kyasanur forest disease virus ?  
 (1) Sand fly  
 (2) Haemaphysalis spinigera  
 (3) Aedes aegypti  
 (4) Hyalomma ticks  
 (5) Question not attempted
142. Which cellular receptor is critical for HIV entry into host cells ?  
 (1) CD8 (2) CCR5 or CXCR4  
 (3) ICAM-1 (4) MHC-I  
 (5) Question not attempted
143. Amniotic sac of embryonated hen's egg is used for isolation of :  
 (1) HIV  
 (2) Influenza virus  
 (3) Hepatitis B virus  
 (4) Polio virus  
 (5) Question not attempted
144. The process of producing a virus for a live vaccine, in which it loses ability to cause disease but retains ability to induce immune response is called \_\_\_\_\_.  
 (1) Attenuation (2) Avirulent  
 (3) Virulent (4) Adjuvant  
 (5) Question not attempted
145. Which of the following strain is used to produce live attenuated vaccine for Varicella virus ?  
 (1) OKA strain  
 (2) Live oral Gal E mutant  
 (3) Jeryl-Lynn strain  
 (4) Rubini strain  
 (5) Question not attempted
146. Who was the first scientist to develop the vaccine for Smallpox virus ?  
 (1) Jonas Salk  
 (2) Albert Sabin  
 (3) Alexander Fleming  
 (4) Edward Jenner  
 (5) Question not attempted
147. Which viral strategy helps evade host immune detection ?  
 (1) Promoting apoptosis  
 (2) Blocking MHC-I expression  
 (3) Stimulating phagocytosis  
 (4) Enhancing antigen presentation  
 (5) Question not attempted
148. Quadrivalent HPV vaccine contains following HPV genotypes :  
 (1) 6, 11, 16, 18  
 (2) 6, 9, 16, 18  
 (3) 9, 11, 16, 18  
 (4) 1, 11, 16, 18  
 (5) Question not attempted
149. Which of the following is an RNA based vaccine for COVID 19 ?  
 (1) Covaxin  
 (2) Oxford-AstraZeneca  
 (3) Novavax  
 (4) Moderna  
 (5) Question not attempted
150. Which term refers to procedures implemented within a laboratory to ensure the quality of test results on a daily basis ?  
 (1) Internal Quality Control (IQC)  
 (2) External Quality Assessment (EQA)  
 (3) Accreditation  
 (4) Validation  
 (5) Question not attempted



# रफ कार्य के लिए स्थान / SPACE FOR ROUGH WORK

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  - (2) Live oral Gal-5 mutant
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  - (3) Alexander Fleming
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160. Which viral strategy helps evade host immune detection?
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164. Which of the following exists as circular episomal form during latent infection?
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  - (3) Virulent
  - (4) Advirant
  - (5) Question not attempted