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HSSC-I NATIONAL BOOK FOUNDATION FBISE

BIOLOGY TEST - CHAPTER 5: ACELLULAR LIFE

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. Viruses are called acellular because they:	have a cell wall	have many cells	are not made of cells	have a single cell only	○○●○
2. The word virus is derived from a Latin word meaning:	life	small	venom (poison)	filter	○○●○
3. In the past, the term virus was associated with infectious diseases having:	known bacterial cause	unknown cause	genetic cause	fungal cause	○●○○
4. Viruses are too small to be seen under the:	light microscope	scanning microscope	X-ray microscope	electron microscope	●○○○
5. The first evidence of the existence of viruses came in 1884 from:	Charles Chamberland	Iwanowsky	Stanley	Pasteur alone	●○○○
6. Charles Chamberland worked with:	Robert Koch	Edward Jenner	Louis Pasteur	Alexander Fleming	○○●○
7. Chamberland found that the causative agent of rabies could pass through a:	paper filter	porcelain filter	cotton cloth	glass slide	○●○○
8. Iwanowsky in 1892 worked on the disease of:	polio	rabies	tobacco mosaic	smallpox	○○●○
9. Iwanowsky filtered the juice of diseased tobacco leaves to remove:	bacteria	chlorophyll	water	sugar	●○○○
10. After rubbing the filtered juice on healthy leaves, the healthy leaves:	turned red	remained healthy	died at once	developed the disease	○○○●
11. W. M. Stanley in 1935 crystallised the infectious particle now known as:	tobacco mosaic virus (TMV)	HIV	polio virus	bacteriophage	●○○○
12. Viruses can be seen with the help of the:	dissecting microscope	compound light microscope only	electron microscope	hand lens	○○●○
13. The study of viruses is called:	protozoology	mycology	virology	bacteriology	○○●○
14. A complete viral particle is called a:	capsomere	capsid	virion	prion	○○●○

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Questions	A	B	C	D	A B C D
15. A virion is divided into two parts: the core and the:	flagellum	coat	tail	nucleus	○●○○
16. The core of a virion consists of the viral genome and:	ribosomes	proteins (enzymes)	chloroplasts	mitochondria	○●○○
17. The genetic material of a virus is either DNA or:	lipid	RNA	starch	protein	○●○○
18. Retroviruses and hepatitis B virus contain the enzyme:	amylase	reverse transcriptase	catalase	DNA ligase	○●○○
19. The enzyme reverse transcriptase converts:	RNA into DNA	DNA into protein	DNA into RNA	protein into RNA	●○○○
20. The outer covering of a viral particle consists of the capsid and the:	envelope	slime layer	plasma membrane	cell wall	●○○○
21. The capsid is the protective coat of:	carbohydrate around the core	lipid surrounding the core	protein surrounding the core	DNA around the core	○○●○
22. The capsid is composed of identical repeating subunits called:	nucleosomes	plasmids	virions	capsomeres	○○○●
23. The herpes virus has how many capsomeres in its capsid?	12	162	252	20	○●○○
24. The adenovirus that causes common cold has how many capsomeres?	162	20	252	42	○○●○
25. When capsomeres are arranged in 20 triangles, the symmetry is called:	helical	icosahedral	binary	complex	○●○○
26. When capsomeres are arranged in a hollow coil that appears rod-shaped, the symmetry is called:	complex	icosahedral	helical	spherical	○○●○
27. The lipoprotein envelope of some viruses is derived from the:	viral nucleus	cell surface membrane of the host	host cell wall	host chromosome	○●○○
28. The viral envelope is often covered with:	flagella	cilia	pili	glycoprotein spikes	○○○●
29. Viruses can be considered non-living because they:	can mutate	have genetic material	occur in strains	cannot reproduce independently outside a host	○○○●
30. Viruses are classified on the basis of host organisms or:	structural characters	size only	colour	habitat only	●○○○
31. The classification of viruses based on host includes animal viruses, plant viruses and:	fungal toxins	bacteriophages	protozoa	prions only	○●○○

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Questions	A	B	C	D	A B C D
32. On the basis of capsid, the tobacco mosaic virus has a:	helical capsid	no capsid	polyhedral capsid	complex capsid	●○○○
33. On the basis of capsid, adenoviruses have a:	complex capsid	polyhedral capsid	helical capsid	enveloped capsid only	○●○○
34. On the basis of capsid, bacteriophages have a:	complex capsid	no capsid	helical capsid	polyhedral capsid	●○○○
35. The classification of viruses on the basis of genome and mode of replication was given by:	Lynn Margulis	Carl Woese	David Baltimore	Robert Whittaker	○○●○
36. The smallpox virus has a:	double-stranded RNA genome	no genome	single-stranded RNA genome	double-stranded DNA genome	○○○●
37. The influenza virus is an example of an:	dsDNA virus	ssRNA virus (template for mRNA synthesis)	dsRNA virus	ssDNA virus	○●○○
38. HIV is an example of an:	ssRNA virus (template for DNA synthesis)	dsRNA virus	ssDNA virus	dsDNA virus	●○○○
39. The rubella virus has:	ssRNA that serves as mRNA	ssDNA	dsRNA	dsDNA	●○○○
40. Viruses are parasitic in nature and highly:	free living	photosynthetic	general in host range	specific to their host	○○○●
41. Bacteriophages infect only:	plants	bacteria	fungi	mammals	○●○○
42. The tobacco mosaic virus infects only:	bacteria	fish	mammals	tobacco plants	○○○●
43. The rabies virus infects:	fungi	mammals	bacteria only	only plants	○●○○
44. HIV enters only certain types of:	red blood cells	white blood cells	nerve cells	liver cells	○●○○
45. The poliovirus reproduces in:	liver cells	skin cells	white blood cells	spinal nerve cells	○○○●
46. Hepatitis viruses infect only:	skin cells	liver cells	blood cells	spinal cells	○●○○
47. Human cold viruses infect only the cells lining the:	bladder	stomach	intestine	upper respiratory tract	○○○●
48. Viruses attach to specific host receptors with the help of:	flagella	pili	protein spikes	mitochondria	○○●○

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Questions	A	B	C	D	A B C D
49. The specificity of attachment determines the:	host range of the virus	speed of the virus	colour of the virus	size of the virus	●○○○
50. Poliovirus can enter the cells of only humans and other:	rodents	birds	primates	reptiles	○○●○
51. Viruses outside the host are:	dividing	actively metabolising	dormant and non-living	growing	○○●○
52. Viruses outside the host are threatened mainly by:	other microorganisms	light only	pH and temperature	lack of food	○○●○
53. The genome of a virus outside the host:	is destroyed at once	doubles	remains viable for a long time	mutates only	○○●○
54. Enveloped viruses outside the host survive for a:	equal time as non-enveloped	longer time than non-enveloped	very long time	shorter time than non-enveloped	○○○●
55. A virus that attacks bacteria is called a:	viroid	retrovirus	bacteriophage	prion	○○●○
56. A bacteriophage is generally:	rod shaped only	tadpole shaped	spiral	spherical	○●○○
57. The three main parts of a bacteriophage are the head, neck and:	flagellum	tail	spore	capsule	○●○○
58. The head of a bacteriophage is:	icosahedral in shape	spherical only	rod shaped	helical	●○○○
59. The tail of a bacteriophage is a hollow tube made of:	proteins	DNA	lipids	carbohydrates	●○○○
60. Through the hollow tail of a phage, the nucleic acid:	never passes	is digested	is stored	passes during infection	○○○●
61. The tail of a bacteriophage is surrounded by a:	pilus	cell wall	contractile sheath	capsule	○○●○
62. The first step of phage infection of a bacterium is:	adsorption	penetration	maturation	lysis	●○○○
63. The insertion of the core tube of a phage into the bacterial envelope is called:	adsorption	lysis	penetration	maturation	○○●○
64. During penetration, the phage injects its:	head into the cytoplasm	DNA into the bacterial cytoplasm	tail into the cytoplasm	protein into the nucleus	○●○○
65. The phage that performs the lytic cycle is called a:	temperate phage	prophage	lysogenic phage	lytic or virulent phage	○○○●

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Questions	A	B	C	D	A B C D
66. Lytic phages develop a relationship with the host called:	commensalism	master–slave	host–guest	mutualism	○●○○
67. In the lytic cycle, host DNA is disintegrated by a virally encoded:	lipase	RNAase	protease	DNAase	○○○●
68. The viral DNA is not affected by the DNAase because it has undergone certain:	translation	mutation	replication	chemical modification	○○○●
69. The steps of the lytic cycle after penetration include synthesis of phage components, assembly, maturation and:	integration	adsorption	lysis and release	induction	○○●○
70. The assembly of phage components into a mature infective particle is called:	maturation	induction	lysis	penetration	●○○○
71. Within 20 to 25 minutes, approximately how many phage particles are produced from one infected cell?	200	2	2000	20	●○○○
72. The phages that perform the lysogenic cycle are called:	retrophages	lysogenic or temperate phages	lytic phages	virulent phages	○●○○
73. Lysogenic phages develop a relationship with the host called:	predator–prey	parasite–host only	master–slave	host–guest	○○○●
74. The integrated state of phage DNA in the host chromosome is called a:	provirus	plasmid	prophage	virion	○○●○
75. The process of integration of phage DNA with the host chromosome is called:	adsorption	lysogeny	lysis	induction	○●○○
76. Bacteria harbouring a prophage are called:	virulent bacteria	sterile bacteria	lysogenic bacteria	lytic bacteria	○○●○
77. The termination of the lysogenic state is called:	induction	adsorption	maturation	lysis	●○○○
78. Conditions that favour induction include desiccation, UV or ionizing radiation and:	mutagenic chemicals	water	nutrients	warmth	●○○○
79. After induction, the separated phage DNA initiates the:	binary fission	conjugation	lysogenic cycle	lytic cycle	○○○●
80. In genetic engineering, phage DNA is used as a:	enzyme	hormone	antibody	vector	○○○●
81. A collection of clones that contains multiple copies of all the genes of an individual is called a:	genomic library	DNA ladder	gene bank of seeds	phage plaque	●○○○
82. The application of genetically engineered phages that kill pathogenic bacteria is called:	phage therapy	chemotherapy	gene therapy only	radiotherapy	●○○○

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Questions	A	B	C	D	A B C D
83. Phage therapy has an advantage over antibiotics in that phages have a:	no specificity	broad spectrum of activity	narrow spectrum of activity	harmful effect on normal flora	○○●○
84. Phages are being formulated as targeted drug-delivery systems in:	radiotherapy	surgery	dialysis	antibacterial nano medicines	○○○●
85. HIV is the causative agent of:	rabies	polio	AIDS	hepatitis	○○●○
86. AIDS stands for:	acquired infectious disease syndrome	autoimmune deficiency syndrome	acute immune disorder syndrome	acquired immune-deficiency syndrome	○○○●
87. HIV was identified in 1984 by a research team from the Pasteur Institute in France and the:	Oxford University	Max Planck Institute	National Institute of Health in USA	WHO in Switzerland	○○●○
88. The virus was named HIV in:	1986	1984	1990	1980	●○○○
89. The envelope of HIV contains glycoproteins gp120 and:	gp41	gp60	gp80	gp100	●○○○
90. The glycoprotein of HIV needed to attach to the host cell is:	gp120	gp21	gp160	gp41	●○○○
91. Beneath the HIV envelope, there is a shell made of:	cellulose	matrix proteins	chitin	lipids only	○●○○
92. The HIV capsid is somewhat:	spherical	rod shaped	cubical	conical	○○○●
93. The HIV core contains two single strands of:	DNA	RNA	protein	lipid	○●○○
94. The enzyme of HIV used to convert viral RNA into viral DNA is:	protease	reverse transcriptase	integrase	DNAase	○●○○
95. The enzyme of HIV used to incorporate viral DNA into host DNA is:	ligase	integrase	protease	reverse transcriptase	○●○○
96. The enzyme of HIV used to cut large structural proteins into smaller units is:	reverse transcriptase	polymerase	protease	integrase	○○●○
97. HIV attacks only specific host cells called:	CD8 cells	CD4 cells	neurons only	red blood cells	○●○○
98. Cells having CD4 receptors include helper T cells, macrophages and certain:	brain cells	skin cells	bone cells	liver cells	●○○○
99. HIV has host cell specificity because it attaches only with:	CD4 receptors	insulin receptors	antibody receptors	CD8 receptors	●○○○

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Questions	A	B	C	D	A B C D
100. The integrated viral DNA in the host chromosome is called the:	prophage	plasmid	virion	provirus	○○○●
101. New HIV virions are released from the host cell by:	budding	exocytosis of the nucleus	lysis only	diffusion	●○○○
102. Helper T cells activate B cells to secrete:	enzymes	vitamins	hormones	antibodies	○○○●
103. Helper T cells also activate cytotoxic T cells to kill virus-infected and:	healthy cells	red blood cells	cancerous cells	nerve cells	○○●○
104. The virus is named Human Immunodeficiency Virus because it decreases the number of:	helper T cells	red blood cells	platelets	neurons	●○○○
105. The three stages of HIV infection are asymptomatic carrier, AIDS-related complex and:	full-blown AIDS	late carrier	early AIDS	chronic hepatitis	●○○○
106. During the asymptomatic carrier stage, the person is:	not infectious	immune	highly infectious	cured	○○●○
107. The standard HIV blood test for antibodies becomes positive during the:	recovery stage	ARC only	full-blown AIDS only	asymptomatic carrier stage	○○○●
108. In full-blown AIDS, the person usually suffers from several:	fractures	burns	allergies	opportunistic infections	○○○●
109. HIV itself does not kill a person; it destroys:	red blood cells	T cells of the immune system	nerve cells	bones	○●○○
110. The treatment of HIV infection that suppresses the virus is called:	immunisation	antiretroviral therapy (ART)	radiotherapy	chemotherapy	○●○○
111. AIDS can be controlled by preventing the transfer of:	body fluids from patient to unaffected person	food	water in swimming pools	air	●○○○
112. HIV is not transmitted by:	used syringes	shaking hands and hugging	unscreened blood	sharing blades	○●○○
113. AIDS is also not transmitted by:	mosquitoes and other insects	infected needles	infected mothers' blood at birth	infected blood	●○○○
114. Hepatitis is generally characterised as inflammation of the:	heart	kidney	liver	lungs	○○●○
115. Hepatitis A is also called:	enteric hepatitis only	serum hepatitis	delta hepatitis	infectious hepatitis	○○○●
116. Hepatitis A is transmitted by the:	faecal–oral route	mosquito bite	sexual contact only	blood transfusion	●○○○

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Questions	A	B	C	D	A B C D
117. Typical symptoms of hepatitis A include fever, nausea, vomiting and:	blindness	jaundice	rash	paralysis	○●○○
118. The only human disease known to be caused by a viroid is:	hepatitis A	hepatitis C	hepatitis D	hepatitis B	○○●○
119. The hepatitis D viroid can enter a liver cell only when enclosed in a capsid obtained from the:	hepatitis E virus	hepatitis A virus	HIV	hepatitis B virus	○○○●
120. Herpes simplex is characterised by painful:	breathing difficulty	paralysis	fluid-filled blisters or sores	bone pain	○○●○
121. The two primary types of herpes are oral herpes and:	eye herpes	nerve herpes	skin herpes	genital herpes	○○○●
122. Oral herpes is caused by:	polio virus	adenovirus	herpes simplex virus type-1	herpes simplex virus type-2	○○●○
123. Genital herpes is caused by:	rubella virus	herpes simplex virus type-1	polio virus	herpes simplex virus type-2	○○○●
124. The sores of herpes can last for:	1 year	1 to 2 days	1 month	7 to 10 days	○○○●
125. Herpes is treated by:	antiviral drugs	antibiotics	surgery	antifungal drugs	●○○○
126. Polio is caused by the polio virus, which is an:	bacteriophage	enterovirus	retrovirus	adenovirus	○●○○
127. Cotton leaf curl disease is caused by:	herpes viruses	adenoviruses	polio viruses	begomoviruses	○○○●
128. Cotton leaf curl disease is transmitted by the:	honey bee	whitefly	aphid only	housefly	○●○○
129. The first symptom of cotton leaf curl disease is a deep downward cupping of the:	oldest leaves	flowers	roots	youngest leaves	○○○●
130. Control of cotton leaf curl disease is mainly based on:	insecticide treatments against the insect vector	irrigation	fungicides	antibiotics	●○○○
131. COVID-19 is considered the most significant health threat since:	the Spanish flu	World War II	World War I	the Black Death	○●○○
132. The pandemic cost the world more than:	850 trillion dollars	85 million dollars	85 billion dollars	8.5 trillion dollars	○○○●
133. The World Bank estimates a weak influenza pandemic like H1N1 of 2009 could reduce global GDP by about:	$3 trillion	$3 billion	$300 billion	$30 million	○○●○

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Questions	A	B	C	D	A B C D
134. The number of viruses that cause common cold is more than:	50	200	20	100	○●○○
135. A vaccine against common cold is not practical because:	it is caused by bacteria	it is not an infection	there are no viruses	there are many viruses that cause it	○○○●
136. The limitation of the flu vaccine is the constantly:	evolving strains of the virus	absent immune response	lack of antigens	stable strains	●○○○
137. Prions are infectious particles made of:	RNA only	protein and DNA	DNA only	protein only	○○○●
138. Prions contain:	DNA	RNA	both DNA and RNA	no nucleic acids	○○○●
139. Prions are much more resistant than viruses to:	oxygen	UV light and heat	enzymes	water	○●○○
140. Prion proteins on brain cells cause clumping, memory loss and:	bleeding	fever only	paralysis of limbs only	neurodegeneration	○○○●
141. A prion disease of humans is:	AIDS	polio	rubella	Kuru	○○○●
142. A prion disease of cattle is:	mad cow disease	anthrax	foot and mouth disease	rinderpest	●○○○
143. Prion diseases have:	a vaccine	a quick cure	no treatment or cure	an antibiotic cure	○○●○
144. Viroids are pathogens consisting of a short circular:	protein only	single-stranded DNA with a coat	single-stranded RNA without a protein coat	double-stranded DNA with a coat	○○●○
145. Viroid RNA:	codes for a capsid	does not code for any protein	is double-stranded	codes for several proteins	○●○○
146. Viroid replication uses the enzyme:	RNA polymerase II	reverse transcriptase	DNA polymerase	ligase	●○○○
147. Some viroids are ribozymes which can:	make proteins	produce ATP	cleave themselves (self-cleavage)	synthesise lipids	○○●○
148. A plant disease caused by viroids is:	wheat rust	tobacco mosaic disease	potato spindle tuber disease	cotton leaf curl disease	○○●○
149. Another plant disease caused by viroids is:	citrus canker	late blight	crown gall	cucumber pale fruit disease	○○○●
150. Viroids spread through mechanical damage, seed, pollen or:	biological vectors	soil only	water only	air only	●○○○

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