

[KZ 1011]

Sub. Code: 9127

M.Sc MOLECULAR VIROLOGY EXAMINATION
FIRST YEAR
(for Candidates admitted from 2009-2010 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS
Q.P. Code : 289127

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Explain in detail the mechanism of DNA replication in prokaryotes.	17	40	20
2. Write in detail the replication and propagation of retroviruses.	17	40	20

II. Write notes on :

1. Describe the mechanism of DNA condensation in eukaryotes.	4	10	6
2. Explain the features of genetic code.	4	10	6
3. Write short notes on prions and their diseases.	4	10	6
4. Define the role of introns and exons.	4	10	6
5. Describe the event of polyadenylation of ribonucleic acids.	4	10	6
6. Distinguish the process of transcription in pro and eukaryotes.	4	10	6
7. Differentiate the replication of single strand and double strand DNA viruses.	4	10	6
8. What are antisense RNA molecules? State their significance.	4	10	6
9. How are viral nucleic acids processed after infecting the host? Explain the strategies.	4	10	6
10. Write short notes on types and properties of histones.	4	10	6

[LA 0412]

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Time : Three hours

Maximum :100marks

Answer All questions.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Write in detail the post transcriptional modifications of a typical eukaryotic cell.	17	40	20
2. What are prions? How are they converted into infecting particles? Explain the physical and chemical properties of prions.	17	40	20

II. Write notes on :

1. Write an account on histones and their roles.	4	10	6
2. Explain the nucleic acid replication of Human Immunodeficiency Virus?	4	10	6
3. Explain the replication mechanism of Influenza viruses.	4	10	6
4. Discuss the role of Okazaki fragments in DNA replication?	4	10	6
5. Explain the regulation of gene expression in prokaryotes using a suitable model.	4	10	6
6. Distinguish antigenic drifts and antigenic shifts. Add a short note on their significance.	4	10	6
7. Compare and differentiate the features of DNA polymerases.	4	10	6
8. Explain degeneracy of the genetic code.	4	10	6
9. Write short notes on post translational modifications.	4	10	6
10. Describe the event of transcription initiation in prokaryotes.	4	10	6

[LD 1013]

OCTOBER 2013

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Time : 3 hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on :

(2X20=40)

1. Describe Viral oncogenes. Discuss mechanisms of viral oncogenesis.
2. What are prions? Explain their structure and significance.

II. Writes notes on:

(10X6=60)

1. Catabolic repression
2. Evolutionary significance of histoproteins
3. Write a short notes on:
 - a) Spliceosomes
 - b) Polyadenylation
4. Nucleic acid based classification of viruses
5. Elaborate features of DNA polymerase
6. Explain transcription initiation in prokaryotes
7. Describe constituents of nucleosome and chromatin structures
8. Explain the replication of Polio and influenza viruses
9. Procession of primary transcripts in to mature mRNA
10. Replication mechanism of S V 40 virus.
