

NUCLEOTIDES & GENETICS- 2020  
MODULE 06 2<sup>ND</sup> YEAR – MCQs

17/08/2020

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Total marks: 70

Time Allowed: 2½ hours

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**Q No. 1.**

- a. Draw a structure of purine ring to show its sources of carbon and nitrogen. How is de novo purine synthesis different from pyrimidine synthesis? (5)
- b. Discuss the regulation of purine nucleotide biosynthesis. (5)

**Q No. 2**

A 46 years old man presented to the emergency department with complain of severe right toe pain. On examination, his right toe was swollen, red, warm and tender. His serum uric acid level was 14.6 mg/dL.

- a. What is your most likely diagnosis? (1)
- b. What is hyperuricemia? Mention the causes of hyperuricemia (4)
- c. Name the enzyme defect in this condition. How will you treat this condition (5)

**Q No. 3**

- a. Mention the cause and the features of lesch- Nyhan syndrome. (5)
- b. What is Orotic aciduria. Mention it's cause and complications. (5)  
Differentiate between CPS I & CPS II

**Q No. 4**

- a. What is replication? Explain the process of replication comparing Prokaryotes & Eukaryotes. (6)
- b. What is the difference between Replication & Gene expression. Compare both. (4)

**Q No. 5**

- a. What is transcription? Explain the transcription in Prokaryotes. (5)
- b. Explain the process of transcription in Eukaryotes. Also mention the difference from Prokaryotes. (5)

**Q No. 6**

- a. Write a note on post transcriptional modifications (5)
- b. What are the different types of RNA? Explain the structure of tRNA. (5)

**Q No. 7**

Write Short Notes on

- a. Alternative splicing (2)
- b. UTRs (2)
- c. Ribosomes in Prokaryotes & Eukaryotes (2)
- d. Comparison of RNA Polymerases in Prokaryotes & Eukaryotes (4)