GURUDAS COLLEGE

DEPARTMENT OF BIOCHEMISTRY

UG INTERMEDIATE EXAMINATION, 2020

B.SC BIOCHEMISTRY HONS. SEMESTER IV

PAPER Core Course 9 Metabolism of Amino Acids and Nucleotides BCM-A-CC-4-9-TH

TIME 30 mins FULL MARKS 10+25

Choose correct answer:

Answer all the questions:

1. Transamination reaction in amino acid synthesis is catalyzed by enzyme_____

a) Nitric oxide synthase

b) Decarboxylase

c) Aminotransferase

d) Glutamate decarboxylase

2. Intermediates of which of the following metabolic pathway have not been used in the synthesis of amino acids?

a) Glycolysis

b) Fatty acid biosynthesis

c) Citric acid cycle

d) Pentose phosphate pathway

3. Which of these is a hereditary disease caused due to an error in amino acid metabolism?

a) Homocystinuria

b) Albinism

c) Phenylketonuria

d) Branched-chain ketoaciduria

4. The activity of which of the following enzyme is inhibited by the chemotherapeutic agent during deoxyribonucleotide synthesis?

a) Dihydrofolate reductase

b) Ribonucleotide reductase

c) Thymidylate synthase

d) CTP synthetase

5. What is the final product of purine degradation in mammals?

a) Guanine

b) Inosine

c) Uric acid

d) Hypoxanthine

6. Name the genetic disorder which is caused by the deficiency of enzyme HGPRT?

a) SCID

b) Lesch-Nyhan syndrome

c) Cystic fibrosis

d) Down syndrome

7. Name the deficiency in which T and B lymphocyte do not develop properly?

a) XLA

b) CVID

c) SCID

d) Multiple myeloma

8. Which of the following compound is the common intermediate of TCA cycle and UREA cycle?

a) α-ketoglutarate

b) fumarate

c) oxaloacetate

d) succinyl CoA

9. Which of the followings is the common nitrogen acceptor in all reactions involving transaminases?

a) pyruvate

b) α-ketoglutarate

c) oxaloacetate

d) acetoacetate

10. Hydroxylation of phenylalanine to tyrosine requires all except

a) NADPH

b) molecular oxygen

c) glutathione

d) tetrahydrobiopterin

11. Which of the following statements is correct about glutamate dehydrogenase?

a) universally present in all cells of the body

b) catalyses convertion of glutamate to glutamine

c) required for transamination reaction

d) can utilize either of NAD+/NADP+

12. Which of the followings is required as coenzyme in transamination reaction?

a) pyridoxal phosphate

b) biotin

c) coenzyme A

d) folic acid

13) Which is the rate limiting step of pyrimidine synthesis that exhibits allosteric inhibition by cytidine triphosphate

a) Aspartate transcarbamoylase

b) Hypoxanthine Guanine phosphoribosyl Transferase

c) Thymidylate synthase

d) Xanthine oxidase

14) Which of the following is a required substrate for purine biosynthesis ?

a) 5- methyl thymidine

b) Ribose phosphate

c) PRPP

d) 5-Fluoro uracil

15. Which of the following conditions is associated with hyperuricemia?

a) Adenosine deaminase deficiency

b) Over activity of PRPP synthetase

c) Von Gierke's disease

d) Lesch Nyhan syndrome

16. One amino acid directly involved in the purine biosynthetic pathway is:

a) aspartate

b) alanine

c) glutamate

d) leucine

17. The hormones epinephrine and norepinephrine are derived biosynthetically from:

a) arginine.

b) histidine.

c) tryptophan.

d) tyrosine.

18. Muscle wants to do glucose-alanine cycle when

a) it is starving

b) ketosis occurs

c) it is not starving

d) it is starving and going into ketosis