

National Board of Examinations

Question Paper Name :	DNB Biochemistry Paper2
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DNB Biochemistry Paper2

Group Number :	1
Group Id :	3271871912
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Group Marks :	100
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

DNB Biochemistry Paper2

Section Id :	3271871915
Section Number :	1
Section type :	Offline

Mandatory or Optional :	Mandatory
Number of Questions to be attempted :	10
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	3271871919
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 32718718732 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Please write your answers in the answer booklet within the allotted pages as follows:-

Question Number	Answer to be attempted within	Question Number	Answer to be attempted within
Q. 1	Page 1-5	Q. 6	Page 26-30
Q. 2	Page 6-10	Q. 7	Page 31-35
Q. 3	Page 11-15	Q. 8	Page 36-40
Q. 4	Page 16-20	Q. 9	Page 41-45
Q. 5	Page 21-25	Q. 10	Page 46-50

1. a) Write the steps of the detoxification of ammonia by urea cycle. Explain its regulation and list three disorders associated with defects in urea cycle. [3+2+3]
- b) Explain how vitamins play key roles in the TCA cycle. [2]

Question Number : 2 Question Id : 32718718733 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) How impairment of HMP shunt leads to hemolytic anemia? [2.5]
- b) How fructose-rich diet may cause hypertriglyceridemia, hypercholesterolemia and

hyperuricemia? [2.5]

c) How brown adipose tissue promotes thermogenesis. [2.5]

d) How Intake of barbiturates precipitate an attack of porphyria. [2.5]

Question Number : 3 Question Id : 32718718734 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

a) What is De Ritis ratio? Write its clinical significance. Explain why serum Alkaline phosphatase level increases in surgical jaundice. How can intrahepatic cholestasis be differentiated from extra hepatic cholestasis? [1+2+2+2]

b) Define enterohepatic circulation and write its physiological function(s) and pathological significance(s). [3]

Question Number : 4 Question Id : 32718718735 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Write the role of hormones in adipose tissue metabolism. How do these hormones influence blood lipid parameters. [5+5]

Question Number : 5 Question Id : 32718718736 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

a) Explain the role of fructose 2,6- biphosphate in regulation of blood glucose levels. [4]

b) Enumerate various Glucose transporters along with their tissue location and functions. [6]

Question Number : 6 Question Id : 32718718737 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) How cAMP integrates the regulation of glycogenolysis and glycogenesis? [3]
- b) How does the glycogen storage and the release of glucose from these stores differ in muscle and liver? How do these differences lead to the difference in clinical presentations of the glycogen storage disorders of liver and that of muscles? [3+4]

Question Number : 7 Question Id : 32718718739 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) Explain how vitamin D regulates calcium homeostasis. Write the effect of serum calcium on serum levels of Vitamin D1, D2 and D3. [2.5+2.5]
- b) Explain anti-oxidant role of vitamin E. How does vitamin C interact with it in this process? [3+2]

Question Number : 8 Question Id : 32718718740 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

Discuss the role of Divalent metal transporter (DMT), ferroportin and hepcidin in iron homeostasis. How are the synthesis of Transferrin receptor and ferritin regulated? [6+4]

Question Number : 9 Question Id : 32718718741 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 10

- a) Discuss the importance of purine salvage reactions. Explain why the genetic disorder of this pathway affect brain and lymphocyte function but not the muscle function. [2+3]
- b) How is hepatic purine biosynthesis regulated? [5]

Question Number : 10 Question Id : 32718728339 Question Type : SUBJECTIVE Consider As Subjective : Yes Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 10

Describe degradation of phenylalanine. Add a note on Phenylketonuria, its lab diagnosis and novel treatment. [10]