1969	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY		
	EXAMINATION FOR BS.C STUDENTS (CHEMISTRY SECTION)		
	COURSE TITLE:	Inorganic Reaction Mechanism	COURSE CODE: CH 4216
DATE:	JUNE, 2015	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer in the following questions:

1) a- Discuss the mechanism of substitution reactions in octahedral and square planar complexes.
   b- Show by equations :
   1- Substitution reactions without breaking metal-ligand bond.
   2-Dichloro diamine platinium(II) complex.
   3- Synthesis of Trans Dichloro nitro amine platinum(II).
   4- Mechanism of one electron transfer reactions in complexes.

2) a-Define the complamentry and non- complamentry reactions.
   b- What are the factors affecting the rate of substitution reaction?
   c-Define the Trans series.

3)The progress of the following reaction can be followed by different methods. Discuss these methods.

$$[Co(NH_3)_5Cl]^{+2} + H_2O \rightarrow [Co(NH_3)_5(H_2O)]^{+3} + Cl^-$$

4)Tetrachloro platinium(II) ion reacts with ammonia molecule giving complex (A) which reacts with bromide ion followed by pyridine molecule giving complex (B). Also, complex (A) reacts with another ammonia molecule giving complex (C).
What are the geometrical structure of complexes A, B and C.

5)Chloro pentaamine cobalt(III) ion (A) reacts with hydroxide ion giving complex(B) and water molecule. Complex (B) loss chloride ion giving complex (C) which reacts with water molecule giving complex (D).
What are the formulae of these complexes?.

Examiners
Prof. Dr. Mohamed Gaber Abu-Elazm

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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR SENIOR STUDENTS OF CHEMISRY SECTION			
	COURSE TITLE:	NUCLEIC ACID METABOLISM		COURSE CODE: 4230
DATE: 15 - 6.15	JUNE, 2015	SECOND TERM EXAM	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 HOURS

Answer the following questions:

I- A-Explain each of the following:- (25 marks)

i- The specificity of the pancreatic nucleotidases and that of lysosomal nucleotidases.
ii- Origin of atoms in purine rings and the De Novo purine nucleotide synthesis.
iii- The pyrimidine ring system is completed before a ribose 5-phosphate is attached.
iv- The synthesis of AMP from IMP and the salvage of IMP via AMP catabolism have the net effect of deaminating aspartate to fumarate
v-. Uric acid is the end product of purine catabolism .

B-A portion of template strand of a gene has the sequence
TCCATGAGTTGA. · identify the 5′ end and the 3′ end of the molecule. write the nucleotide sequence of the complementary DNA segment.What is the sequence of nucleotides in the RNA that is formed from this template? (3 marks)

II- Illustrate in equations . (12 marks)

i-The enzymatic methylation of the dUMP is catalyzed by thymidylate synthase
ii-Thioredoxin is a physiologic reducing agent of ribonucleotide reductase
iii-CMP and UMP are degraded to their respective bases in a series of reactions. Specifically, these are dephosphorylation, deaminase and phosphorylation reactions,

III- Choose the correct answer (s) . (10 marks)

i- PRPP synthetase reaction is stimulated for a source of nitrogen by:-
a) ATP b) R-5-P c) IMP d) all of the above

ii- Allopurinol, a drug approved for the treatment of Gout inhibits:-
a)hypoxanthine oxidase b)xanthine oxidase c) HGPRTase d) uricase

iii- Cytidine nucleotides are formed in a glutamine-dependent amination, the substrate of which is
a) UDP b)UTP c)CMP, d) dCDP

iv- ATCase ,
a) inhibited by CTP and activated by ATP
b) inhibited by ATP and activated by CTP
c) inhibited by UTP and activated by ATP
d) inhibited by ATP and activated by UTP

v- The end products of uracil catabolism are
a) CO_2,NH3,β alanine
b) CO_2,NH3,β aminobutyrate
c) CO_2,NH3,β aminoisobutyrate
d) β -Ureidopropionate

PROF. Dr. AHMED SAAFAN