Total No. of Questions :4]

SEAT No. : ____

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M.Sc. - II

ANALYTICAL CHEMISTRY

CH - 481: Bioanalytical and Forensic science

(2008 Pattern) (Semester - IV)

Time : 3 Hours] ***[Max. Marks :80***

Instructions to the candidates:

1) ***All questions are compulsory and carry equal marks.***
2) ***Answer to the two sections should be written in seperate answer books.***
3) ***Use of logarithmic table/ non-programmable calculator is allowed.***

SECTION - I

Q1) Attempt any four of the following. **[20]**

a) Define the terms:

i) Coca derivatives.

ii) Opium.

iii) Medicinal preparations.

iv) Narcotic drug.

b) Write note on 'LSD'

c) Give the offences and penalties in "Psychotropic substances ACT"

d) Explain the procedure for isolation and identification for amphetamines.

e) Biological sample was determined for net protein utilization digestability and biological value gives following results:

i) Intake nitrogen = 12.1mg.

ii) Faecal nitrogen = 8.1 mg

P.T.O.

iii) Endogenous faecal nitrogen = 4.1 mg

iv) Urinary nitrogen = 6.1mg

v) Endogenous urinary nitrogen = 4.0 mg

Calculate net protein utilization, digestability and biological value.

Q2) Attempt any four of following. **[20]**

a) Explain the term preservatives. Give some examples of inorganic preservatives. How SO_2 is estimated from food sample.

b) Discuss the steps involved in the identification of coal-tar dye prepared in food-shuff.

c) Write a note on sweeting tables.

d) Explain a suitable method for estimation of caffine content from coffee.

e) A sample of saccharine tablet (1.30g) was subjected to saccharine estimation and it required 1.8 ml of 0.1N NaoH. calculate percentage of saccharin in the sample. [Given: mol-ut-of saccharin 183.2]

SECTION - II

Q3) Attempt any four of the following: **[20]**

a) Explain the term rancidity of oil. Give the method used to determine the peroxide value of an oil.

b) Outline method for the estimation of Ash content of food.

c) Give method for determination of Total carbo hydrate in food sample.

d) What are legislatives regarding the use of colours in food.

e) Calculate the amount of lactic acid in milk sample when 20.0ml of milk required 3.2 ml of 0.1 N NaoH neutralisation. (Given: mol. ut of Lactic acid = 90)

Q4) Attempt <u>any four</u> of the following. **[20]**

a) How is theobromine estimated from coca?

b) Discuss the chemistry of vitamine A, with respect to structure, source and biological function.

c) Write a note on barbiturates.

d) outline the method for the estimation of cocaine hydrochloride.

e) A 4.556 g sample of caffein was subjected to kjeldhal's method. Volatile base was distilled and absorbed in 50.00 ml 0.11 N H_2SO_4. The excess acid was titrated against 0.1 N NaoH and required 6.7 ml of it. (Given : Molecular weight of caffein sulphate = 486). Calculate the percentage of caffein in sample.

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