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**BR—369—2016**

**FACULTY OF SCIENCE**

**M.Sc. (Third Semester) EXAMINATION**

**OCTOBER/NOVEMBER, 2016**

**(Old Course)**

**INORGANIC CHEMISTRY**

**Paper (CH 534/1)**

**(Analytical Chemistry)**

**(Wednesday, 23-11-2016)**

**Time : 2.00 p.m. to 4.00 p.m.**

*Time—Two Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) All questions carry equal marks.*

1. Answer the following (any *five*) :

10

- (a) State and explain the principle of differential thermogravimetry.
- (b) Explain the term static thermogravimetry.
- (c) What is voltametry ?
- (d) State and explain the principle of amperometric titrations.
- (e) Enlist various water quality parameters.
- (f) State the normal value of, blood urea nitrogen.
- (g) Name the adulterant present in Tea leaves and Coffee.
- (h) Define the term octane number.

P.T.O.

(i) Give name of any *two* narcotic substances

(j) Write importance of ash value of food.

2. Attempt any *three* :

10

(a) Discuss the significance of BOD<sub>5</sub> value.

(b) Describe the method of determination of protein from food sample.

(c) What are dangerous drugs ? Give examples.

(d) Draw a experimental setup of voltametry apparatus.

(e) Differentiate between flash point and fire point.

(f) Explain the term calorific value of food.

(g) Write chemical formulae for producer gas and water gas.

3. Answer the following (any *two*) :

10

(a) Describe the method to determine hardness of water.

(b) Draw nature of DTA curve and explain it.

(c) State and explain the principle of cathodic stripping voltametry.

4. Answer the following (any *two*) :

10

(a) What are the factors affecting DTG curve ?

(b) Explain the working of DME with advantages.

(c) What are the precautions essential while collecting blood sample ?

5. (A) Select the *correct* alternative from the following : 5
- (i) Thermogravimetry is based on continuous recording of mass changes of a sample of material, as a function of a .....
- (a) Combination of pressure with time
- (b) Combination of temperature with time
- (c) Combination of vapor pressure with time
- (d) Combination of temperature with density
- (ii) Chemical stability of food refers to the change in the type of molecules present in a food with time due to chemical or biochemical reactions. .... is a chemical stability of food sample.
- (a) non-enzymatic browning
- (b) droplet creaming in milk
- (c) fungal growth
- (d) darkening
- (iii) Renal health can be indicated by the .....
- (a) Blood glucose
- (b) Blood creatinine
- (c) Blood albumin
- (d) Blood urea nitrogen
- (iv) ..... is the insoluble residue of an acid hydrolysis followed by an alkaline one.
- (a) Protein
- (b) Fat
- (c) Weende cellulose
- (d) Vitamin

P.T.O.

(v) Normal limit of fasting blood glucose is between .....

mmol/L :

(a) 3.9 to 5.8

(b) 70 to 120

(c) 1.2 to 11.8

(d) 190 to 240

(B) Write short notes on any *two* :

5

(a) Bomb calorimeter

(b) Linear sweep voltametry

(c) Radioactive wastes.