

(7 pages)

**1164/HT1**

**OCTOBER 2010**

**INSTRUMENTATION**

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Time : Three hours

Maximum : 100 marks

**SECTION A — (20 × 1 = 20 marks)**

Answer ALL questions.

1. Samples to be weighed in analytical balance should be of
  - (a) High temperature
  - (b) Low temperature
  - (c) Room temperature
  - (d) Freezed.
2. Physical balance weighs with accuracy of
  - (a) 10 mg
  - (b) 0.1 mg
  - (c) 1 mg
  - (d) 100 mg.
3. \_\_\_\_\_ of the object is the multiplication value of the magnifying powers of the objective and the eye piece
  - (a) Magnification
  - (b) Resolution
  - (c) Refractive index
  - (d) None of the above.
4. \_\_\_\_\_ microscope provides 3D views of specimens
  - (a) Scanning Electron
  - (b) Transmission Electron
  - (c) Phase Contrast
  - (d) Dark Field.
5. \_\_\_\_\_ rotors are designed to contain large volume of sample
  - (a) Swinging bucket
  - (b) Fixed angle
  - (c) Zonal
  - (d) None of the above.
6. Preparative rotors are used in biology for pelleting
  - (a) Mitochondria
  - (b) Viruses
  - (c) Ribosomes
  - (d) All of the above.
7. \_\_\_\_\_ is used for adjusting temperature in hot air oven
  - (a) Thermostat
  - (b) Pilot lamp
  - (c) Indicator
  - (d) None of the above.

8. In continuous flow analyzer reagents are separated during supply by
- (a) Wooden blocks
  - (b) Chemicals
  - (c) Series of bubbles
  - (d) No separation required.
9. Monochromator which produce radiations of single wavelength based on refraction are
- (a) Prism
  - (b) Grating
  - (c) Photocell
  - (d) None of the these.
10. In spectrophotometer the xenon lamp produces
- (a) UV light
  - (b) Visible light
  - (c) Both a & b
  - (d) None of the above.
11. \_\_\_\_\_ demonstrated moving boundary electrophoresis
- (a) Nernst Einstein
  - (b) Coulomb
  - (c) Tiselius
  - (d) Newton.
12. Affinity chromatography is based on \_\_\_\_\_ interaction between an analyte and specific molecules
- (a) Non-covalent
  - (b) Covalent
  - (c) Ionic
  - (d) Hrdrophobic.
13. Taq DNA polymerase is isolated from
- (a) *Thermus aquaticus*
  - (b) *Thermococcus litoralis*
  - (c) *Pyrococcus furiosus*
  - (d) None of the above.
14. Different schemes of PCR \_\_\_\_\_
- (a) Inverse PCR
  - (b) Anchored PCR
  - (c) Both a & b
  - (d) None of the above.
15. In line densitometry the value of light absorption is expressed as
- (a) Spots
  - (b) Image
  - (c) Graph
  - (d) None of the above.



32. Explain the types of chromatography.
  33. Discuss the applications of microtome.
  34. Explain Scintillation counting methods.
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BIOCHEMISTRY

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Time : Three hours

Maximum : 100 marks

SECTION A — (20 × 1 = 20 marks)

Answer ALL the questions.

1. Isomaltose is the disaccharide unit present in  
(a) Dextran                      (b) Amylopectin  
(c) Glycogen                      (d) All of the above.
2. The hydrolysis mixture containing glucose and fructose is  
(a) Table sugar                  (b) Malt sugar  
(c) Invert sugar                  (d) None.
3. Prostacyclins inhibits \_\_\_\_\_  
aggregation  
(a) RBC                              (b) WBC  
(c) Platelet                          (d) None.
4. Ergosterol is the provitamin of  
(a) Vitamin E                      (b) Vitamin K  
(c) Vitamin D                      (d) Vitamin A.
5. \_\_\_\_\_ is capable of crossing the placental barrier  
(a) Ig E                              (b) Ig M  
(c) Ig A                              (d) None.
6. Ig G molecule contains \_\_\_\_\_ polypeptide chains  
(a) 4                                  (b) 2  
(c) 6                                  (d) 5.
7. \_\_\_\_\_ is an immune suppressive agent.  
(a) Allopurinol                      (b) Mercaptopurone  
(c) Azathiopurine                  (d) None.
8. Pyrimidine bases are absorbed in UV light at  
(a) 240 nm                          (b) 260 nm  
(c) 280 nm                          (d) 250 nm.
9. The quantity of enzyme in a cell is regulated by  
(a) Enzyme reactions  
(b) Enzyme degradation  
(c) Enzyme induction & repression  
(d) Both (b) and (c)

10. The normal level of AST enzyme is  
(a) 4 to 20 U/L (b) 3 to 20 U/L  
(c) 2 to 20 U/L (d) None.
11. Her's disease is due to the absence of  
(a) Acid phosphatase  
(b) Liver phosphorylase  
(c) Muscle phosphorylase  
(d) None.
12. \_\_\_\_\_ is due to the deficiency of aldolase B  
(a) Essential fructosuria  
(b) Congenital galactosemia  
(c) Hereditary fructose intolerance  
(d) Glycosuria.
13. Gaucher's disease is due to the deficiency of  
(a)  $\alpha$ -glucosidase (b)  $\beta$ -galactosidase  
(c)  $\beta$ -glucosidase (d) None.
14. The symptoms of Wolman disease is  
(a) Xanthomas (b) Atherosclerosis  
(c) Anemia (d) None.
15. Cysteine is a  
(a) Essential amino acid  
(b) Non essential amino acid  
(c) Semi essential amino acid  
(d) None.
16. Parkinson's disease is due to the decreased production of \_\_\_\_\_ in the brain  
(a) Tyrosinase (b) Serotonin  
(c) Dopamine (d) Catecholamine.
17. Bilirubin is excreted in urine in  
(a) Hepatic jaundice  
(b) Obstructive jaundice  
(c) Both (a) and (b)  
(d) Hemolytic jaundice.
18. Faeces turn dark due the oxidation of  
(a) Stercobilinogen (b) Urobilinogen  
(c) Bilirubin (d) None.
19. In healthy person the blood pH ranges from  
(a) 7.5 to 7.55 (b) 7.35 to 7.45  
(c) 7.3 to 7.35 (d) None.

