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MANIPAL INSTITUTE OF TECHNOLOGY
(A Constituent Institute of MAHE – Deemed University)
Manipal – 576 104



THIRD SEMESTER B.E. DEGREE MAKE-UP EXAMINATIONS- JANUARY 2007

SUBJECT: BIOCHEMISTRY (BME 209)
(REVISED CREDIT SYSTEM)

Tuesday, January 16, 2007 9.00 a.m. to 12 noon

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

1. Answer any FIVE full questions.
2. All the questions carry equal marks.
3. Draw labeled diagram wherever necessary

1. (a) Explain the complete metabolism of bilirubin in our body. What is the principle of Van den Bergh's test? 6+2=8
- (b) Outline the principle of serum protein electrophoresis. Compare and contrast the patterns of normal and nephritic syndrome conditions. 4+1+1=6
- (c) With the help of a neat and labeled diagram of combination electrode, outline how the pH of a solution is measured. 06
2. (a) Describe the Embden-Mayerhof's pathway of aerobic Glycolysis. Add a note on its energetics. 8+2=10
- (b) What is Urea? Give the causes for increased blood urea level. 1+4=5
- (c) Sketch the components of electron transport chain [ETC] in the order. 05
3. Write short answers on: 5×4=20
- (a) Double helical structure of DNA.
- (b) Normal 'fasting' blood glucose level and the associated clinical significance.
- (c) Classification of lipids.
- (d) Estimation and significance of serum creatinine.
4. Write short notes on: 5×4=20
- (a) Classification of carbohydrates.
- (b) Estimation and significance of serum total proteins and A: G ratio.
- (c) Principle and the instrumentation of spectrofluorimetry
- (d) Classification of enzymes with suitable examples.

5. Write short notes on: (5×4=20)
- (a) Recombinant DNA and its application.
 - (b) Importance of diagnostic enzymes.
 - (c) Principle and instrumentation of spectrophotometry.
 - (d) Mechanism of action of peptide hormones.
6. Describe β -oxidation of Palmitic acid under the following sub-divisions: 2+2+4+2=10
- (i) Activation of Palmitic acid
 - (ii) Transport across the mitochondrial membrane
 - (iii) β -oxidation proper and
 - (iv) Energetics

