

M.Sc. 4th Semester Examination, 2013

**BIO-MEDICAL LABORATORY SCIENCE
AND MANAGEMENT**

PAPER—401 (Unit-25)

Full Marks : 40

Time : 2 hours

Answer all questions

The figures in the right-hand margin indicate marks

*Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

MODULE – I

1. Answer any five of the following questions : 1 × 5

**(a) Which of the following is the most common
form of urine preservative :**

- (i) Boric acid**
- (ii) IN HCl**
- (iii) NaF**

(Turn Over)

- (b) Substance that show a diurnal variation in their urinary excretion pattern are be evaluated using a
- (i) First morning urine
 - (ii) Midstream clean catch urine
 - (iii) Timed collection.
- (c) An unpreserved urine specimen collected at midnight is kept at room temperature until the morning hospital shift. Which of the following changes will most likely occur :
- (i) Decrease in bacteria and nitrite
 - (ii) Decrease in glucose and ketones
 - (iii) Decrease in urine colour and clarity.
- (d) Which of the following urine characteristics provides the best rough indicator of urine concentration and bodyhydration :
- (i) Colour
 - (ii) Clarity
 - (iii) Volume.

- (e) Which of the following will not influence the volume of urine produced.
- (i) Exercise
 - (ii) Carbohydrate ingestion
 - (iii) Caffeine ingestion.
- (f) Urine pH can be modified by all of the following except
- (i) diet
 - (ii) increased water intake
 - (iii) urinary tract infection.
- (g) Which of the following aids is helpful in the differentiation of haemoglobinuria and hematuria
- (i) Leukocyte esterase test
 - (ii) microscopic examination
 - (iii) Urine colour.

(h) Which of the following Ketones are not detected by the reagent strip or tablet test

- (i) Acetone
- (ii) acetoacetate
- (iii) β -hydroxy butyrate.

2. (a) Write briefly about the causes of urinary tract infection.

(b) How do you perform technical separation of acetoacetate and β -hydroxybutyrate? Mention the importance of this separate detection of ketone bodies. 2 + (3 + 3)

Or

(a) What is cast ?

(b) Describe about different cast with their clinical significance along with diagram. 2 + 6

3. (a) Mention about disadvantages of specific gravity determination by urinometer.

(5)

(b) Mention the principle of refractometry and state the advantages of this technique.

(c) What would be the possible problems for detection of urinary glucose by strip test ?

2 + (2 + 1) + 2

Or

(a) What kinds of heavy metals are found in urine in some clinical conditions ?

(b) What is hydride generation ?

(c) How do you perform speciation of urinary arsenic ?

1 + 1 + 5

MODULE – II

4. Answer any *five* of the following questions : 1 × 5

(a) What is exudate ?

(b) Give an example of a synovial crystal.

(c) Which type of stools are best for detecting ova and parasites ?

- (d) What is 'pasty' stool ?
 - (e) What is pericardial fluid ?
 - (f) What is arthrocentesis ?
 - (g) What is hydrothorax ?
 - (h) Write the name of one micro-organism of lower respiratory tract.
5. (a) What is the clinical significance of Ropes Test ?
- (b) Describe the procedure of specimen collection, examination and making reports in the laboratory. 2 + (4 + 2)

Or

- (a) How do you collect sputum specimen by taking special precautionary measurements ?
- (b) What types of media and antibiotics are used in swab culture ?
- (c) Write the culturing procedure of throat swab in brief ? 3 + 3 + 2

6. (a) What kinds of fluid accumulate in the pleural space ?
- (b) Differentiate between transudate and exudate.
- (c) What is thoracentesis ? $2 + 3 + 2$

Or

- (a) Mention about different influencing factors associated with the interference of the result of stool analysis.
- (b) What would be the microscopic findings of normal stool ?
- (c) What is Cobweb coagulation ? $3 + 3 + 1$