

**ROYAL CIVIL SERVICE COMMISSION**  
**BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2012**  
**EXAMINATION CATEGORY: TECHNICAL**

**PAPER III: SUBJECT SPECIALIZATION PAPER FOR: LAB TECHNOLOGY**

Date : October 14, 2012  
Total Marks : 100  
Examination Time : 2.5 Hours  
Reading Time : 15 Minutes

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**INSTRUCTIONS**

1. Write your Roll Number clearly on the answer booklet in the space provided.
2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are **NOT PERMITTED TO WRITE** during this time.
3. Use either **Blue** or **Black** ink pen or ball point pen for the written part and **Pencils** for the sketches and drawings.
4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper.
5. This Question Booklet consists of **6 pages**. It is divided into two sections – namely **SECTION A** and **SECTION B**.
6. **SECTION A** consists of two parts. **Part I and Part II**.

**Part I** consists of 30 multiple choice questions carrying one (1) mark each and is **compulsory**. The answer of your choice should be clearly written **in whole** along with the question and option number on your answer booklet.

**Part II** consists of four (4) short answer questions of five (5) marks each and all questions are compulsory.

7. **SECTION B** consists of two **Case Studies**. Choose only **ONE** case study and answer the questions under your choice. Each case study carries fifty (50) marks in total.

## SECTION A

### PART A. MULTIPLE CHOICE QUESTIONS (30 Marks)

#### Directions:

In this part there are thirty multiple choice questions, each carrying 1 mark.

Each question is followed by four suggested answers. Write the correct answer as **a, b, c** or **d** against the respective question number in your answer sheet.

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#### Bacteriology, Virology and Parasitology

1. Meningococci is
  - a. *Haemophilus influenzae*
  - b. *Neisseria meningitidis*
  - c. *Streptococcus pneumoniae*
  - d. Staphylococci
  
2. Of those listed below, the **BEST** method for detecting motility is
  - a. coverslip.
  - b. Gram stain.
  - c. supravital.
  - d. hanging drop.
  
3. *Escherichia coli* usually grow on MacConkey agar exhibiting
  - a. swarming
  - b. pink colonies
  - c. pink periphery and a blue-black center
  - d. black colonies with a green metallic sheen
  
4. A well-controlled Gram stain would be useful in identifying
  - a. rabies
  - b. gonorrhoea
  - c. tuberculosis
  - d. amoebic dysentery
  
5. Following are serious complications related to post *Streptococcal* infections
  - a. Diabetes and blood pressure
  - b. Glomerulus nephritis
  - c. Cushing's syndrome
  - d. None of the above
  
6. Which of the following are non fermentative bacteria
  - a. *Escherichia coli*
  - b. *Klebsiella pneumoniae*
  - c. *Pseudomonas aeruginosa*
  - d. *Staphylococcus aureus*

7. The recent immunization of tetravalent HPV vaccine in our country is against
- Cervical cancer
  - All HPV types
  - HPV 6, 11, 16 and 18 subtypes
  - HPV 16 and 18 subtypes
8. The function of reverse transcriptase in retro-virus is to
- Convert DNA to RNA
  - Convert RNA to DNA
  - Convert mRNA to proteins
  - Convert tRNA to mRNA
9. The recent pandemic of influenza or swine origin flu is caused by the following
- Orthomyxo virus
  - Paramyxo virus
  - Parvo virus
  - Picarno virus
10. The scientific name of hook worm is
- Ancylostoma duodenale*
  - Ascaris lumbricoides*
  - Fasiolo hepatica*
  - None of the above
11. An asexual life cycle of malaria parasites occurs in
- Mosquitoes
  - Both man and mosquitoes
  - Stagnant waters
  - Man

### **Immunology**

12. Toll Like Receptors (TLR) belongs to
- Innate immunity
  - Acquired immunity
  - Both
  - None of them
13. Immune cells like CD4 cells are
- Antigens
  - Lymphocytes
  - Neutrophils
  - All of the above

### **Biochemistry/Imuno-Haematology/Pathology**

14. The specific gravity of urine and total solids are measured by a
- Photometer
  - coulometer.
  - polarimeter.
  - refractometer.

15. Which of the following are diagnostically significant urinary crystals?
- Urate
  - Oxalate
  - Cystine
  - Calcium carbonate
16. Abnormal fat catabolism produces
- ketone bodies
  - emotional glycosuria
  - alimentary glycosuria
  - orthostatic proteinuria
17. Which one of the following is **NOT** a serum enzyme test used for testing liver function?
- Alkaline phosphatase
  - Lactate dehydrogenase (LDH)
  - Creatinine phosphokinase (CPK)
  - Alanine aminotransferase (glutamic pyruvic transaminase (GPT))
18. The use of daily internal quality control (IQC) range without the use of Levy-Jening's chart is satisfactory for laboratory quality control system
- Yes
  - No
  - Partially
  - Not at all
19. The basic diluting fluid used for automated hematology procedures is
- Osmotic
  - Isotonic
  - Hypotonic
  - Hypertonic
20. Eosinophils are associated with
- allergies.
  - infections.
  - toxic states.
  - mononucleosis.
21. Variation in the size of red blood cells is called
- Hypochromia
  - Anisocytosis
  - Poikilocytosis
  - Polychromatophilia
22. An individual whose genotype is AO is mated with an individual of genotype BO. Their offspring may be of blood groups
- A,O
  - A,B
  - O,B
  - A,B,AB,O

