

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2019
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALISATION PAPER FOR PUBLIC HEALTH

Date	: October 13, 2019
Total Marks	: 100
Writing Time	: 150 minutes (2.5 hours)
Reading Time	: 15 minutes (prior to writing time)

GENERAL INSTRUCTIONS:

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
 - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions
Part II - 4 Short Answer Questions
All questions under SECTION A are COMPULSORY.
 - **SECTION B** consists of two Case Studies. Choose only **ONE** case study and answer the questions of your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the Section, Part and Question Number will NOT be evaluated and no marks will be awarded.
6. Begin each Section and Part in a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **10 printed pages**, including this instruction page.

GOOD LUCK

SECTION A

PART I: Multiple Choice Questions (30 marks)

Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31 (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. The following are the essential elements of primary health care EXCEPT
 - a) Inform, educate, and empower people about health issues.
 - b) Promotion of healthy food.
 - c) Health policy development.
 - d) Provision of essential drugs.

2. All of the following are measures of central tendency, EXCEPT
 - a) Mean
 - b) Median
 - c) Mode
 - d) Variance

3. The socio-ecological model of health promotion is also known as
 - a) Midstream approach
 - b) Downstream approach
 - c) Upstream approach
 - d) Intermediate approach

4. Multi drug resistance tuberculosis (MDR TB) means
 - a) resistance to Pyrazinamide and Amikacin.
 - b) resistance to Rifampicin and Isoniazid (at least both R+INH).
 - c) resistance to Isoniazid and Pyrazinamide.
 - d) resistance to Ethambutol and Kanamycin.

5. The 2017 joint external evaluation report on IHR core capacities of the Kingdom of Bhutan indicates that, of the 19 technical areas under IHR 2005, Bhutan has developed the least core capacities in
 - a) antimicrobial resistance.
 - b) real-time surveillance.
 - c) emergency response operations.
 - d) chemical events.

6. A malaria case contracted locally, with strong epidemiological evidence linking it directly to a known imported case is
 - a) indigenous malaria case.
 - b) imported malaria case.
 - c) introduced malaria case.
 - d) induced malaria case.

7. The 12th five year plan (2018-2023) of the Royal Government of Bhutan consists of
- 13 National Key Result Areas.
 - 15 National Key Result Areas.
 - 17 National Key Result Areas (corresponding to 17 SDG goals of UN).
 - 19 National Key Result Areas.
8. ICD-10 refers to
- International Statistical Classification of Diseases and Related Health Problems, 10th revision.
 - International Classification of Diseases, 2010.
 - International Code of Diseases, 2010.
 - International Code of Diseases, 10th edition.
9. In a study carried out in the hospital emergency ward, every 10th admitted patient was included in the sample. Which sampling procedure is this?
- Random sampling
 - Stratified sampling
 - Convenient sampling
 - Systematic sampling
10. Health inequities
- is a concept that is same as the concept of health inequalities.
 - refer to differences in population health that are avoidable, such as the gap between the health of the richest and the health of the poorest.
 - result from genetic differences.
 - would disappear if everyone ate healthily, engaged in physical activity regularly, and consumed alcohol in moderation.
11. Which one of the following sentences is TRUE?
- Under-five mortality is an indicator.
 - Under-five mortality rate is an indicator.
 - Under-five mortality is lower than infant mortality.
 - The emergency threshold for under-five mortality is 1 death per 10,000 per day.
12. What is true for descriptive statistics?
- Hypothesis testing
 - Calculation of p-value
 - Organization & displaying of data
 - Drawing inferences for population
13. The percentage of GDP spending on healthcare in Bhutan in the 11th five year plan was
- 3-4%
 - 5-6%
 - 7-8%
 - 9-10%

14. The outcome that the investigator is interested in understanding, explaining, or predicting is described as
- Situational variable
 - Dependent variable
 - Independent variable
 - Extraneous variable
15. Project monitoring is sometimes referred to as
- Evaluation
 - Impact evaluation
 - Process evaluation
 - Performance evaluation
16. Which research paradigm is least concerned about generalizing its findings?
- Quantitative Research
 - Qualitative Research
 - Experimental Research
 - Mixed Research
17. A postpartum primipara asks the nurse, "When can we have sexual intercourse again?" Which of the following would be the nurse's best response?
- "Anytime you both want to."
 - "As soon as you choose a contraceptive method."
 - "When the discharge has stopped and the incision is healed."
 - "After your 6 weeks examination."
18. Public health surveillance includes all of the following activities EXCEPT
- Creating graphs of the number of dog bites by week and villages.
 - Soliciting case reports of persons with symptoms compatible with influenza from BHUs.
 - Diagnosing a case of encephalitis is actually due to dengue virus infection.
 - Writing a report on drunk driving among youths to be shared with the members of the parliament.
19. The final aim of negotiation is to
- end a dispute.
 - reach an agreement.
 - implement an agreement between two parties.
 - win at all cost.
20. Which one of the following is NOT a priority health issue under the National Health Promotion Strategic Plan 2015-2023?
- NCDs
 - Nutrition
 - Road Safety
 - Climate change and health impacts

21. *Health Belief Model* is the most widely used conceptual framework in public health studies. It mainly focusses on
- attitude and beliefs of the individual.
 - social factors of the individual.
 - economic factors of the individual.
 - environmental factors surrounding the individual.
22. A patient with severe preeclampsia is admitted in Bajo BHU-I with BP 160/110, proteinuria, and severe pitting oedema. Which of the following would be most important to include in the client's plan of care?
- Daily weights
 - Seizure precautions
 - Right lateral positioning
 - Stress reduction
23. Decomposition of organic wastes at *Memelakha* landfill can generate
- Carbon dioxide
 - Carbon monoxide
 - Methane
 - Suphur dioxide
24. A statement of hope for the future is
- Goal statement
 - Mission statement
 - Vision statement
 - Value statement
25. In Bhutan, the main source of aggregate health information is from
- ePIS
 - Bulletin Board
 - DHIS₂
 - Electronic Medical Record (EMR)
26. Which one of the following best describes the role that history taking plays in patient assessment?
- Clinical history is of secondary importance to clinical examination.
 - Clinical history provides a primary guiding foundation when making clinical decisions.
 - Clinical history is often misleading.
 - Clinical history always need to be confirmed by clinical examination.
27. What does CQI seek to improve?
- Individual work habits
 - Processes
 - Leadership styles
 - Organizational culture

28. The most commonly used beta blocker in the management of hypertension is
- Furosemide
 - Losartan
 - Propranolol
 - Nifedipine
29. The nurse assesses the postpartum vaginal discharge on four clients. Which of the following assessments would warrant notification of the physician?
- A dark red discharge on a 2-day postpartum client.
 - A pink to brownish discharge on a client who is 5 days postpartum.
 - Almost colourless to creamy discharge on a client 2 weeks after delivery.
 - A bright red discharge 5 days after delivery.
30. Evaluations measure
- the timeliness of a program's activities.
 - the outcomes and impact of a program's activities.
 - how closely a program kept to its budget.
 - how well the program was implemented.

PART II – Short Answer Questions (20 marks)

This part has 4 Short Answer Questions. Answer ALL the questions. Each question carries 5 marks. Mark for each sub-question is indicated in the brackets.

Dengue cases reported from 19 dzongkhags (*September 19, 2019, Kuensel*)

Bhutan, this year reported the highest number of dengue cases since 2004. In 2004, about 2,579 cases were reported followed by 1,101 cases in 2012. No cases were reported in 2014 and 2015. As of September 17, a total of 9,000 suspected cases of dengue have been reported. About 3,309 from 19 dzongkhags tested positive for dengue by rapid test kits, of which 77 percent of the positive cases were from Phuentsholing. In Doksum, where dengue cases were reported for the first time this year, health officials found the primary vector available in most of the houses. Health workers are continuing with house surveillance, mass campaigns and other preventive measures.

About 430 cases required hospital admission. Six patients died of dengue so far including two maternal death. Phuentsholing hospital has referred 21 patients to JDWNRH so far.

An official from the department of public health said that of the four types of dengue viruses, Bhutan now had three types of dengue virus circulating in the country.

- Based on the above case, answer the following questions: (5 marks)
 - What causes dengue? (1 mark)
 - How is dengue transmitted? (1 mark)
 - What is the treatment for dengue or dengue haemorrhagic fever? (1 mark)
 - Who are the reservoirs of dengue virus? (1 mark)
 - Who has an increased risk of being exposed to dengue? (1 mark)

2. Match the following diseases against its cases/reflection, e.g. F (2). (5 marks)

- | | |
|-------------------------|--|
| A. Epidemic disease | 1) Usually about 30-40 cases of diabetes reported per week, last week, 38 cases. |
| B. Hyperendemic disease | 2) The average annual incidence of 330 micronutrient deficiency anaemia among students in Thimphu. |
| C. Endemic disease | 3) 30 cases of typhoid occurred within 2 weeks among residents of Gelephu city (usually 0 or 1 cases of typhoid per year). |
| D. Sporadic disease | 4) Over 18 million people worldwide died from influenza in 1918–1919. |
| E. Pandemic disease | 5) Single case of Kala-azar was diagnosed in Mongar. |

3. The July 2019 HIV epidemiological surveillance report of the Ministry of Health reported that a total of 663 HIV cases were detected, 483 were put on ART, 505 are still living. The UNAIDS spectrum report (2013) estimates that there are 1265 people living with HIV/AIDS in Bhutan.

- What do you mean by 90-90-90 global target of ending AIDS epidemic by 2020? (1 mark)
- From the information given, what percentage of the people know their HIV status? (1 mark)
- What is the detection gap in order to reach the 90-90-90 global target of ending AIDS epidemic by 2020? (1 mark)
- What is the treatment coverage? (1 mark)
- Which group of population do you suspect as the main drivers of HIV epidemic in Bhutan? (1 mark)

4. In the past 5 years, the number of TB cases reported to the BHMIS was just 2 -3 cases per year. Of late, a total of 20 TB cases were reported within a span of two and half months. All but two of these cases have been reported from one district. The national newspaper *Kuensel* published an article about one of the first reported cases, which occurred in a girl aged 2 years. Describe the possible causes of the increase in reported cases. (5 marks)

SECTION B: Case Study (50 marks)

Choose either CASE I or CASE II from this section. Each case study carries 50 marks. Mark for each sub-question is indicated in the brackets.

CASE I

The assessment of BHU and Hospital-based Integrated Management of Neonatal & Childhood Illness (IMNCI) was carried out from January through March 2019 to assess the extent to which IMNCI was being implemented in the country. The report presents the main findings of the survey as reported by the health workers. It provides the national overview, strengths and weaknesses of the IMNCI program and the way forward.

A total of 46 BHU-IIs, 2 sub-posts, 3 satellite clinics, 1 BHU-I and 7 hospitals, including the national referral hospital and two regional referral hospitals in 15 districts were visited during the survey. In addition, a total of 110 health workers, including 8 district health managers were interviewed.

In 2018, the majority of health centers have maintained IMNCI case sheet records, except for 3 BHUs and 4 hospitals. Since its revitalization in 2009, the IMNCI program had provided in-service training to 92.5% of health workers across the country. Another 20% confirmed receiving pre-service IMNCI training while at the Faculty of Nursing and Public Health. However, it is noted that only 45% of health workers were able to tell all 4 dangers signs correctly. Likewise, many health workers expressed their inability to secure an intravenous line, insert per nasal and per rectal nasogastric tube, and nebulize sick child with respiratory distress thus indicating loss of clinical skills and acumen over the last few years.

Likewise, monitoring of IMNCI implementation has slackened over the years as is evident from the fact that only 47% of BHUs received supportive supervisory visits from the IMNCI focal persons including district health officers. Five districts reported having a functional IMNCI focal person designated in the district. The majority of health workers voiced their preference for supportive supervision by an IMNCI practising clinician at least once in every 6 months. Most of the health centres reported having an adequate supply of IMNCI drugs and equipment except gentian violet and nystatin paste which were deleted from the essential drug list.

The results from this assessment thus provide guidance and direction in the development of future child health survival strategies. If the first two components of IMNCI viz. improving the skills of health workers and strengthening the health system is established, there is no doubt that Bhutan should be able to achieve 12th FYP targets and SDG health goals within a short span of time.

1. What do you understand by integrated management? (1 mark)
2. What is the use of implementing IMNCI in the country? (1 mark)
3. What illnesses are commonly seen among children under 5 years in Bhutan? (5 marks)
4. What are the four general danger signs of a sick child? (4 marks)
5. Write down the immunization schedule used in Bhutan? (5 marks)

6. Classify malnutrition in children? (3 marks)
7. Name the drugs commonly used in the treatment of Uncomplicated P. Falciparum (2 marks)
8. What is IMR? How do you calculate IMR? What is its significance? How much is the government trying to achieve at the end of 12 FYP in 2023 in terms of IMR and U5MR reduction based on 2017 PHCB indicators? (5 marks)
9. What was the objective of assessing the IMNCI program in 2019? (2 marks)
10. What possible methods do you think were adopted during the IMNCI assessment? (3 marks)
11. If you were the assessor, what instruments will you use for data collection during the assessment? (2 marks)
12. If you were asked to do the IMNCI assessment, how will you present your project work plan with timeline in the form of a Gantt chart? (5 marks)
13. What are the major strengths and barriers of IMNCI implementation in the country? (4 marks)
14. Based on the assessment, what recommendations would you offer to improve the IMNCI program? (6 marks)
15. Why is it important to have good supportive supervision for IMNCI program? (1 mark)
16. What do you know about kangaroo mother care (KMC)? (1 mark)

CASE II

Lhak-Sam - a network of people living with HIV & AIDs in the country was registered as a non-profit organization in 2010 mainly to complement the Ministry of Health in its effort to contain the HIV epidemic. Lhaksam was particularly effective in the advocacy campaigns about HIV and its prevention. It also facilitates treatment, care and support to people living with HIV/AIDS. Recognizing the important role played by Lhaksam in the society, the government in particular and international donors in part supported Lhaksam to achieve its targets and strategies through numerous grants and projects. Of late, many international donors had been withdrawing from Bhutan, which is most worrying as the sustainability of a nascent NGO is put to litmus test. While there is no doubt in the capacity of the staff of Lhaksam in the performance of their duties, it is the lack of skills and capacities of the staff in writing project proposals, managing projects effectively, weak monitoring and evaluation mechanisms etc. that needs to be improved in order to access funds and meet donor requirements for its sustenance.

In order to build the in-house capacity of Lhaksam, you are invited to train the staff of Lhaksam on fundamentals of project management and program evaluation.

1. As a trainer for Lhaksam, how will you explain the basic concepts of project and program management? (2 marks)
2. What do you understand by *objective, aim, target, goal and indicator*? Explain in brief with example. (5 marks)
3. Describe in your own words your understanding about *output and outcome* with example? (3 marks)
4. What is project management? What are the different phases of project management life cycle? (7 marks)
5. What is monitoring and evaluation? Why it is important to have a monitoring and evaluation plan in the life cycle of a project? (3 marks)
6. What are different steps involved in a programme evaluation? (5 marks)
7. Draw a 4 by 4 logical framework table? (5 marks)
8. What is a Gantt chart? Illustrate with example. (3 marks)
9. What is SWOT analysis? Illustrate with example. (4 marks)
10. What role does non-governmental organizations play in implementing programs and projects for the government? How can the government help NGOs in the country? (4 marks)
11. The 74th session of the United Nations General Assembly was held from 17th to 30th September 2019 at the United Nations Headquarters in New York. Apart from the general debate, the 74th session of the UN General Assembly featured 5 high level events and one of them is the high level meeting on universal health coverage. What do you understand by universal health coverage (UHC)? How can you measure universal health coverage? (4 marks)
12. Elaborate the 9 domains of GNH philosophy. Explain in detail the health domain and its variable. (5 marks)

TASHI DELEK