

**Chattogram Veterinary and Animal Sciences University**  
**One Health Institute**  
**Masters in Public Health (MPH)**  
**July-December Semester Final Examination 2023**  
**Course title: Ecology**  
**Code: ECO-602**  
**Full marks: 20, Time: 2 hours**

**(Answer any FOUR of the following questions)**

1. a) Define health and highlight the global context of health to justify the importance of one health. 3  
b) Illustrate *impact, adaptation, mitigation*, and resilience in climate change. 2
2. a) Describe the water cycle and mention its impacts on health. 3  
b) Name the major climate-sensitive infectious diseases with their causes. 2
3. a) Describe carbon cycle in relation to climate change. 2  
b) Describe the components of an ecosystem and relate them. 3
4. a) What are the main public health issues in Bangladesh? Identify ones that are linked to changes in the environment. 1+1  
b) Briefly describe the mangrove ecosystem. 3
5. a) What are the main drivers of changes in the ecosystem? 2  
b) Elucidate the linkages between environment and health. 3
6. a) List the components of a healthy ecosystem. 2  
b) What is a food pyramid? How are we changing it to make our future gloomy? 3
7. a) What are the types of pf ecosystem services? Give examples. 3  
b) Link dengue fever, HIV, COVID-19, and Meningitis to environmental drivers, highlighting their sensitivity to ecological changes. 2

# Chattogram Veterinary and Animal Sciences University (CVASU)

## One Health Institute

Course: Masters in Public Health

July – December Semester Final Examination 2023

Course Title: Environmental and Occupational Health

Course Code: EOH-602

Total Time: 2.00 Hours

Total Marks: 40

### Part - A: Case Study

Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation, in the way that causes least harm to their health. It aligns with the promotion of health and safety at work, which is concerned with preventing harm from hazards in the workplace. The goal of an occupational safety and health program is to foster a safe and healthy occupational environment. OSH also protects all the general public who may be affected by the occupational environment. It is estimated that the economic burden of occupational-related injury and death is nearly four per cent of the global gross domestic product each year and the human cost of this adversity is enormous. Although work provides many economic and other benefits, a wide array of workplace hazards (also known as unsafe working conditions) also present risks to the health and safety of people at work. As defined by the World Health Organization (WHO) "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards". Health has been defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".

#### 1. Answer all the questions - (5 X 3 = 15)

- What do you know about occupational accidents/injuries? Give some examples.
- What is Acclimatization? Do you think it brings benefits to the employees? If yes, how?
- What are the main contributing factors to occupational accidents?
- What are the benefits of a safe and healthy work environment?
- What are the workplace hazards? Give some examples.

### Part - B: Short Notes

#### 2. Anyone - (1 x 5 = 5)

- Standard Operating Procedures and its importance
- Decorum of occupational safety
- Heat stress and management

### Part - C: True/False

#### 3. Answer all the questions - (1 x 10 = 10)

- It is the responsibility and duty of employers to protect their employees and keep them safe.
- A safe work environment is essential for both employees and employers alike.
- The combination of rising temperature and work demands can lead to heat stress situations for workers.
- Acclimatization is the ability of our body to adapt to working in a healthy environment.
- The ultimate goal of occupational health is not preventing workplace-related illnesses and injuries.
- The pneumoconiosis are a group of skin diseases caused by the skin's reaction inhaling certain dusts.
- Heat stress happens when body gains its ability to self-regulate body temperature.
- Workplace safety is not essential regardless of the size of a company.
- The clinical and pathological presentations are not identical to that of non-occupational diseases.
- Physical hazards can not affect those who work in extreme weather conditions or in harmful environments.

**Part - D: MCQs**

**4. Answer all the questions - (1 x 10 = 10)**

- A. The ultimate goal of occupational health is to prevent workplace-related illnesses and injuries through:
- Encouraging safety in the workplace.
  - Ensuring that employees are using skillfully proper methods and actions.
  - Supporting employees who are struggling with illness or absences related to sickness.
  - All the above
- B. Heat related illness include:
- Heat cramps
  - Heat exhaustion
  - a & b
  - None of the above
- C. Ergonomic Hazards include:
- Improperly adjusted workstations and chairs
  - Frequent lifting
  - Poor posture
  - All the above
- D. Humidex is based on the combined effects of high -- & --.
- temperature and humidity.
  - atmospheric pressure and temperature
  - humidity and atmospheric pressure
  - None of the above
- E. Environmental hazards include:
- Extreme temperatures
  - Pollution
  - a & b
  - None of the above
- F. Occupational safety, is a multidisciplinary field concerned with the --, -- & -- of people at work.
- safety
  - health
  - welfare
  - All the above
- G. The following are few main contributing factors to occupational accidents include:
- Poor safety culture
  - Lack of effective training and education
  - a & b
  - None of the above
- H. Occupational health is to promote and maintain highest degree of --, -- and -- of workers in occupations.
- physical
  - mental
  - social well-being
  - All the above
- I. Some medical measures to prevent occupational diseases & injuries include:
- Pre-placement exams
  - Periodic examinations
  - Medical and health care services
  - All the above
- J. All companies, --- & --- need to incorporate safety in their workplaces.
- big
  - small
  - a & b
  - None of the above

MS in Public Health (One Health)

Subject: Molecular Epidemiology

Course code: MOE 602, July-December 2023

Total marks: 40

Time: 2 hours

(Figures in the right margin indicate full marks. Answer any four questions)

- |   |   |  |      |
|---|---|--|------|
| 1 | a | Explain DNA replication with figure.   | 5.0  |
|   | b | Elucidate transcription and translation in eukaryotes and differentiate with prokaryote                              | 5.0  |
| 2 | a | Explain mechanism of producing gene knock out animal. What is the use of gene knock mice?                            | 10.0 |
| 3 | a | What is STR? How it is used as forensic analysis?  | 5.0  |
|   | b | Explain Southern blot process with diagram.  | 5.0  |
| 4 | a | What is genomic library? How will you find your desire gene of interest in a genomic library explain it with figure. | 6.0  |
|   | b | How affinity chromatography technique is used to separate mRNA in the mixture of rRNA and tRNA?                      | 4.0  |
| 5 | a | What is gene cloning?  | 2.0  |
|   | b | Draw and label pUC18. How this plasmid is used in gene cloning?  | 6.0  |
|   | c | Differentiate cloning vector from expression vector.   | 2.0  |

**Chittagong Veterinary and Animal Sciences University**  
**One Health Institute**  
**Masters in Public Health (MPH)**  
**July-December Semester Final Examination 2023**  
**Course title: Health Economics, Policy Planning and Ethics (Theory)**  
**Code: HEP-602**  
**Full marks: 40, Time: 2 hours**

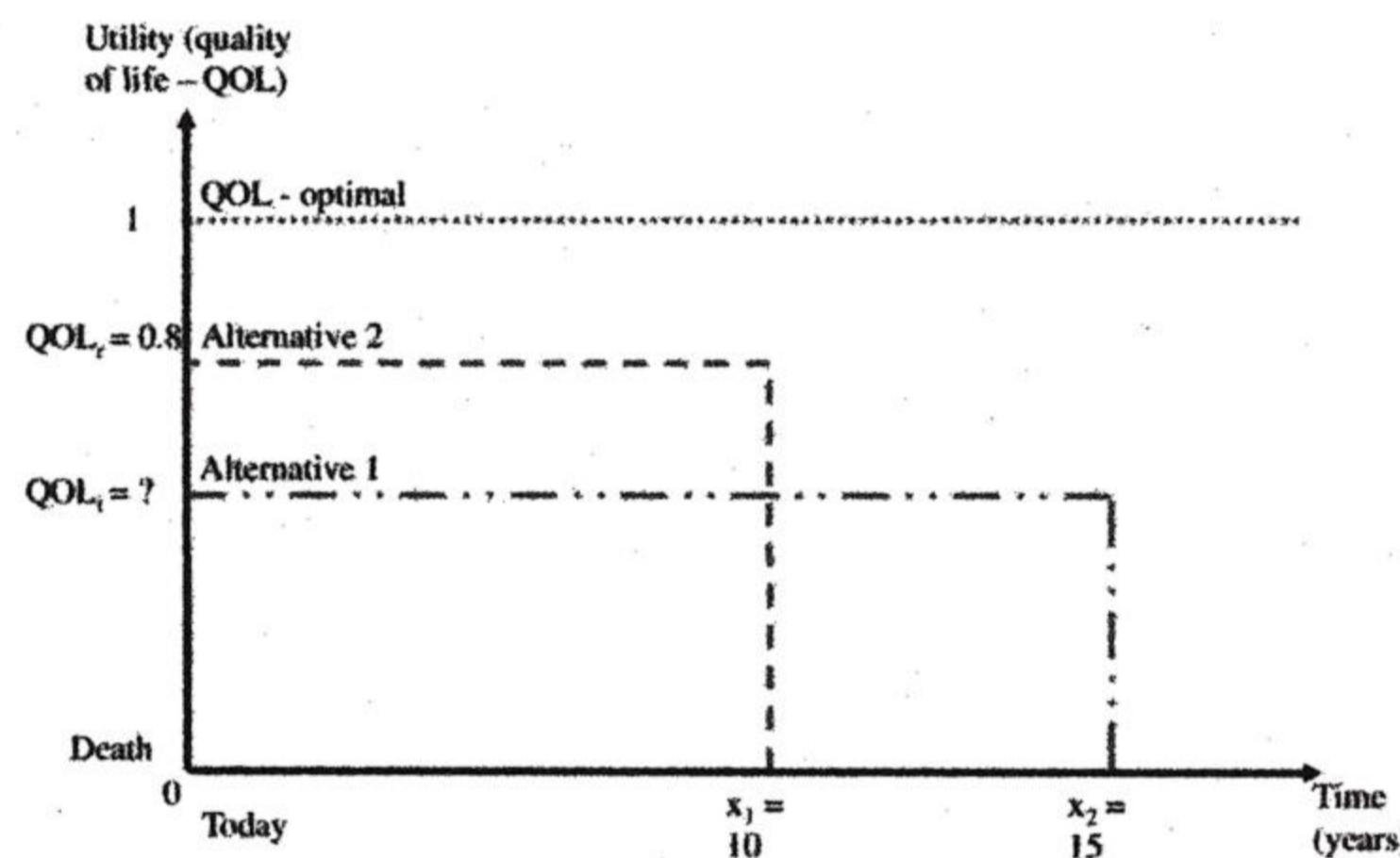
(Figures in the right margin indicates full marks. Answer any 5 questions from the following)

- |    |   |   |
|----|---|---|
| 1. | a. Define health economics.   | 2 |
|    | b. Write its importance.  | 2 |
|    | c. Briefly describe different types of economic evaluation.         | 4 |
| 2. | a. Write 5 goals of national health policy.                         | 4 |
|    | b. What are the common problems of our health care delivery system? | 4 |
| 3. | a. Define ethics.   | 1 |
|    | b. Briefly describe principles of research ethics.                  | 3 |
|    | c. Write very important 4 articles of Helsinki declaration.         | 4 |
| 4. | a. Briefly describe research ethics related to animal.              | 4 |
|    | b. Briefly describe 4 issues of publication ethics.                 | 4 |
| 5. | a. Write 4 objectives of national health policy.                    | 4 |
|    | b. What are the common problems of our health care delivery system? | 4 |
| 6. | a. Draw planning cycle.   | 3 |
|    | b. Describe different types of planning process.                    | 5 |
| 7. | Briefly describe 8 modern professional misconducts.                 | 8 |

**Chattogram Veterinary and Animal Sciences University**  
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**Masters in Public Health (MPH)**  
**July-December Semester Final Examination 2023**  
**Course title: Health Economics, Policy Planning and Ethics (Practical)**  
**Code: HEP-602**  
**Full marks: 20, Time: 1 hour**

(Answer any 4 (four) questions from the following questions. Each question contains equal mark (4X5))

- How does the concept of demand and supply apply to the healthcare sector, and what are the unique challenges in maintaining equilibrium in this market?
- What do you mean by QALY? Calculate the utility score of QOL<sub>i</sub> using the time trade-off approach from the following figure.



- A person experienced diabetes at the age of 50. His life expectancy was 75 years. However, he will survive only 65 years due to diabetes. Due to this morbidity, he will have a disability adjustment for 15 years with a disability score of 0.5. If we treat the patient with a new diabetic treatment protocol, he will survive 70 years. In this case, he will have a disability adjustment for 20 years with a disability score of 0.45. Calculate the DALYs aversion for the new treatment protocol.
- What is health economic evaluation? Write down the outcomes we compare with costs for each type of health economic evaluation.
- If the market interest rate is 8% and the inflation rate is 4 %, calculate the real rate of interest. After calculating the real interest rate, fill in the empty cells of the following table and calculate the undiscounted and discounted benefit-cost ratio, and interpret your results.

Year	Discount factor	Undiscounted		Discounted	
		Cost	Benefit	Cost	Benefit
1		50	0		
2		25	45		
3		15	30		
4		0	15		
Total					

$$PV = 1 / (1+r/100)^n$$

**Chattogram Veterinary and Animal Sciences University**  
**One Health Institute**  
**Masters in Public Health (MPH)**  
**July - December Semester Final Examination 2023**  
**Course title: Anthropology (Theory)**  
**Code: ANP-602**  
**Full marks: 40, Time: 2 hours**

(Figures in the right margin indicate full marks. Answer any 4 questions from the following)

1. Define 'anthropology'. What is the main concept of anthropology? Social Scientists stated the recent trend of culture, 'culture is all-encompassing'. Give four examples from the context of your society on the basis of the statement. 2+2+6
2. What are the main branches of anthropology? What are the differences between biological anthropology and socio-cultural anthropology. Discuss the importance of anthropology in public health with examples. 3+3+4
3. What do you mean by 'one health approach'? Discuss the evolution of one health approaches. Write two anthropological perspectives of one health approach. 2+3+5
4. What is 'public health'? Discuss social and behavioral aspects of public health in Bangladesh 2+8
5. Write short notes (**any four**) 2.5 x 4
  - a. Medical anthropology
  - b. Veterinary anthropology
  - c. Anthropology of infectious disease
  - d. Paleoanthropology
  - e. Primate studies
  - f. Social norms
  - g. Social values

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**Code: ANP-602**  
**Full marks: 20, Time: 1 hour**

(Figures in the right margin indicate full marks)

(Answer from one of the following contexts )

**Context: A**

Preliminary information indicate that two type of pig raising practices are found in Bangladesh: one is in small-scale domestic/household pig raising and the other is in large-scale, nomadic pig herds. Pig is an amplifying host of Nipah Virus, Japanese Encephalitis Virus, Influenza Virus Hepatitis E Virus, and Rotavirus. Bangladesh has the experience of all these diseases, which usually result in a number of deaths in humans. There is very little known about pigs and pig raising practices in Bangladesh. It has suggested to conduct research to understand the risk factors for a possible transmission of these diseases has been recorded ever. Suppose you will conduct an anthropological research to explore the possible transmission pathways of these diseases.

1. Based on the context, what will be the specific objectives of this research ? 5
2. Who will be your potential participants conducting this research? Make a table of the sampling. 3+2
3. Select data collection methods that will be suitable to meet your research objectives and study participants, and discuss data collection for the research. 2+3
4. Develop data collection guidelines for one category of participants/methods. 5

**Context: B**

Suppose, the Director of the Medical Center at Chattagram Veterinary and Animal Sciences University (CVASU) observes a notable increase in the number of diarrheal patients visiting this year, particularly originating from the male hostel of CVASU within the past week. The Director promptly notifies the government health authority, prompting them to declare a suspected diarrhea outbreak based on the preliminary information. In your capacity as an anthropologist, you receive an invitation to join the One Health outbreak investigation team.

1. What methods would you employ for data collection and why? What information would you collect through these methods? 3+2
2. Who would be your potential participants conducting this research and why? 3+2
3. Develop data collection guidelines for one category of participants/methods. 5
4. What type of qualitative data analysis method would you follow for the collected data in the outbreak investigation? How would it be related to these data? 5



**Chattogram Veterinary and Animal Sciences University (CVASU)**

**One Health Institute**

**Course: Masters in Public Health**

**July – December Semester Final Examination 2023**

**Course Title: Communication & Behavior (Practical)**

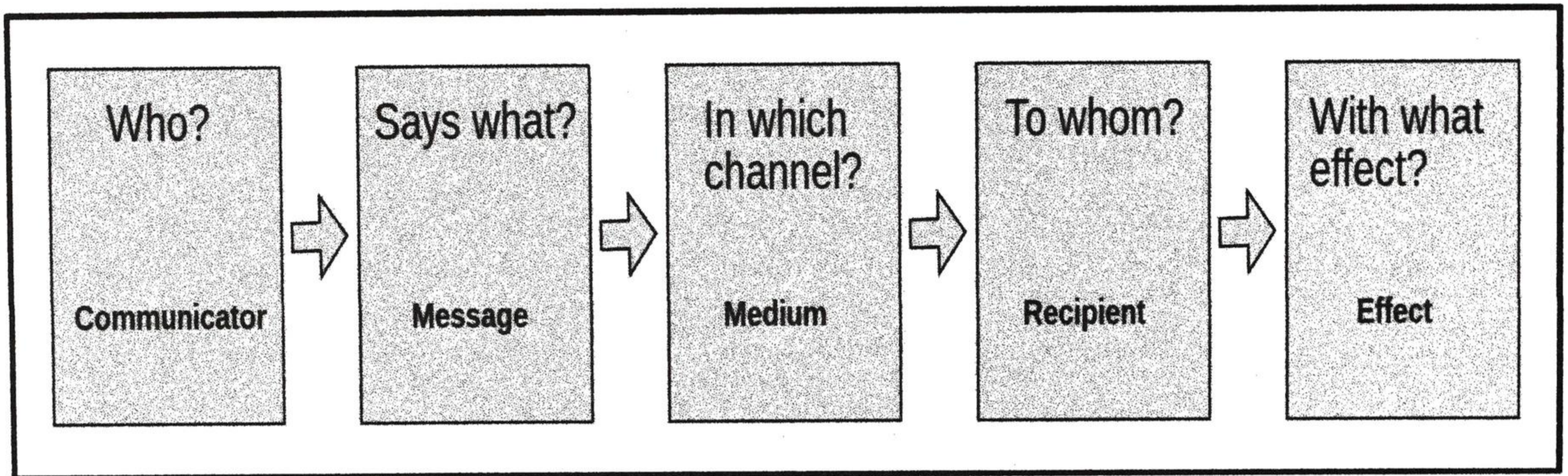
**Course Code: COB-602**

**Total Time: 1.00 Hour**

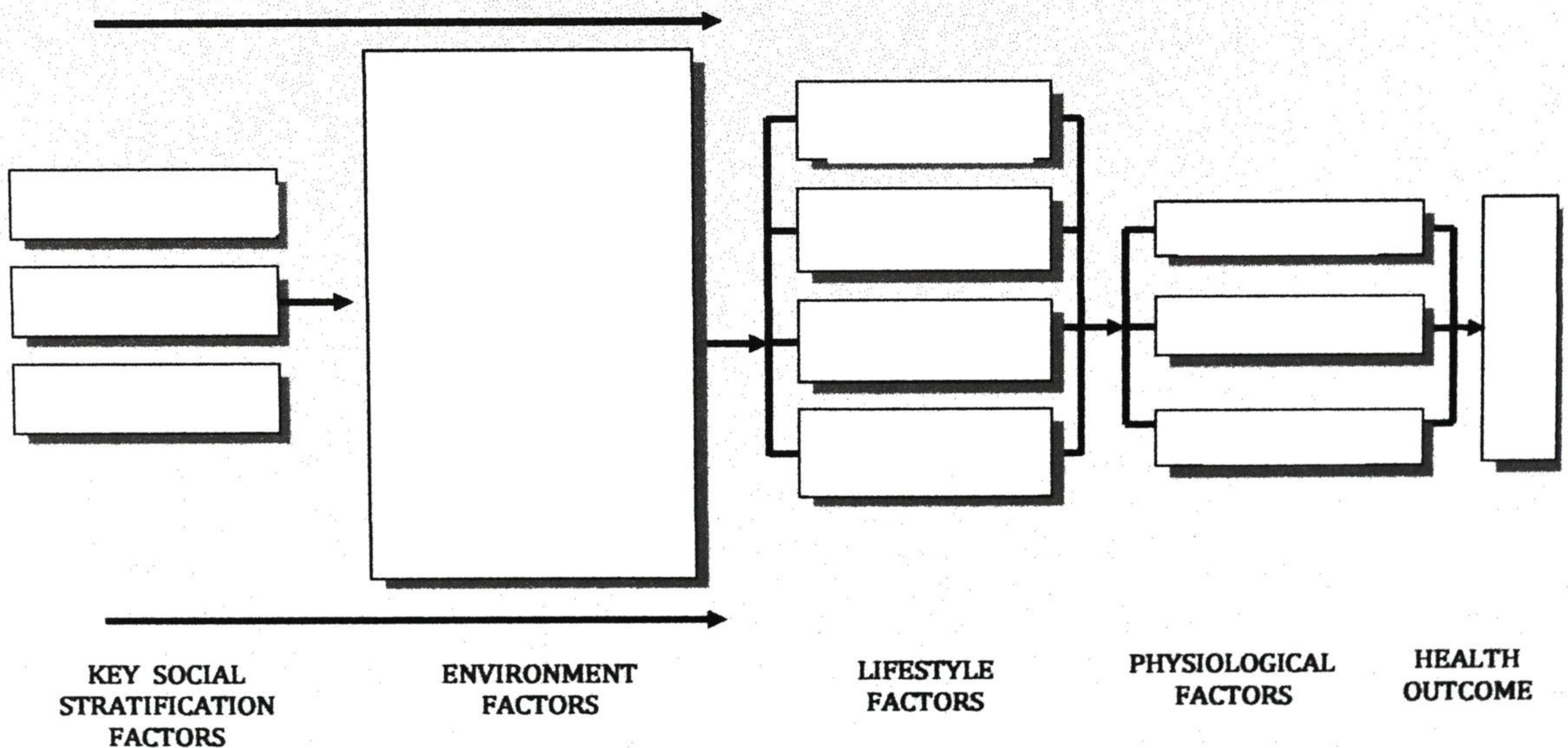
**Total Marks: 20**

**1. Answer the following questions - (10x2 = 20)**

- a). Design a Health Communication approach in Rohingya Refugee Camp as a Health Camp regarding Sanitation and Hygiene practices and associated Health Behavior among that Community People by giving priority of the following Communication Model.



- b). Explain a Framework for Health Promotion Activities that impact on Health Outcome with examples.



# Chattogram Veterinary and Animal Sciences University (CVASU)

## One Health Institute

Course: Masters in Public Health

July – December Semester Final Examination 2023

Course Title: Communication and Behavior (Theory)

Course Code: COB-602

Total Time: 2.00 Hours

Total Marks: 40

### Case Study

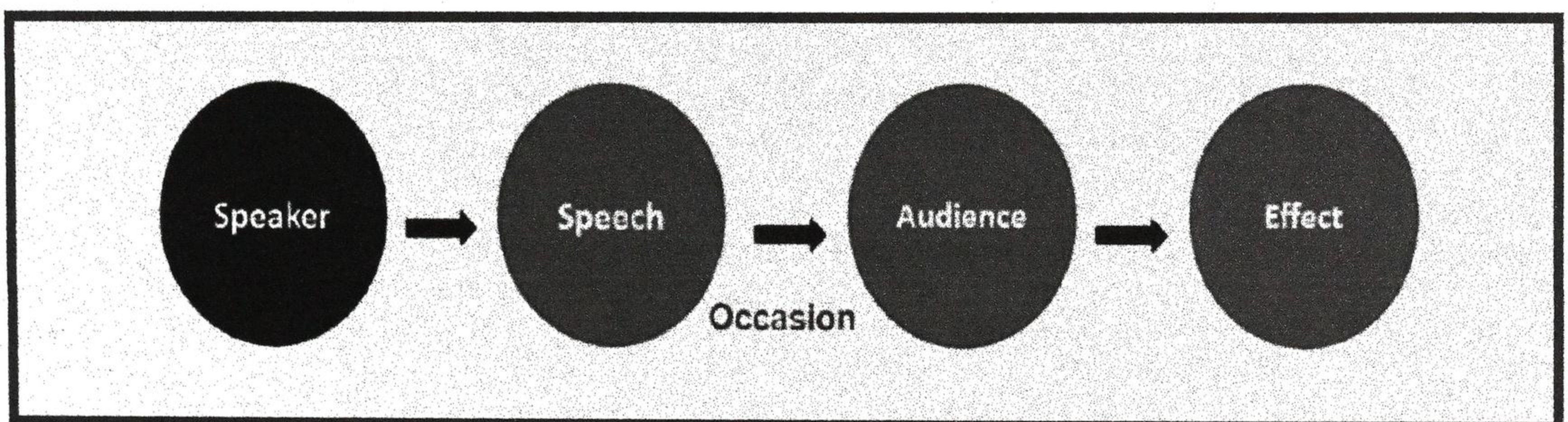
Health communication is a rich, exciting, and relevant area of study that investigates and elucidates the many ways that human and mediated communication dramatically influences the outcomes of health-care and health-promotion efforts. While health communication is a relatively young area of communication inquiry and education, research and writing on this topic has grown tremendously since the early 1980s, generating increasing numbers of important research findings and publications. A major reason for the tremendous growth and development of inquiry related to health communication is the importance of this research area for addressing complex and challenging healthcare demands in society and guiding the promotion of public health. Communication is at the very center of healthcare and health-promotion efforts. To gather relevant diagnostic information from health-care consumers, doctors, nurses, and other health-care providers depend on their ability to communicate effectively by asking pertinent questions, interpreting responses, and probing for more detailed information. Consumers depend on their own ability to communicate with health-care providers when seeking help, identifying health problems, interpreting health-care recommendations and treatment strategies, and negotiating their way through the often complex modern health-care systems.

#### A. Answer the following questions - (5x3 = 15)

- i. What is Communication. Write different types of Communication.
- ii. Define Behavior Change Communication (BCC). Write the Criteria of BCC.
- iii. Briefly mention the Ottawa Charter for Health Promotion.
- iv. What is Communication Barrier? Write different types of Communication Barriers.
- v. What is Health Behavior? How health communication promote health behavior?

#### B. Answer the following question - (10x1 = 10)

- i. How will you define the following Health Communication approach? Utilize the following Health Communication approach in a Primary School regarding regular food habit and selection of proper nutrients rationally giving favor to balanced diet.



**C. MCQs: (5X1=5)**

1. Public health tries to prevent health problems through implementing --- programs, developing ---, --- services, regulating ----- and conducting research.
  - i. different, services, offering, medical treatments
  - ii. social, skills, regulating, management policies
  - iii. educational, policies, administering, health systems
  - iv. None of the above.
  
2. Which Communication model follows the SMCR approach?
  - i. Aristotle Model
  - ii. Lasswell's Model
  - iii. Berlo's Model
  - iv. Shannon and Weaver Model
  - v. Schramm's Model
  - vi. Helical Model
  
3. Which one from the following is one of the Healthy People Goals?
  - i. Quick response to the disaster & to assist the communities in recovery phase.
  - ii. Keep water safe and establish water treatment plant.
  - iii. Promote quality of life, healthy environment development, and healthy behaviors across life stages.
  - iv. None of the above.
  
4. Health Communication contribute to disease ---, improve health --- and improve -- status by the adherence to medical ---.
  - i. diagnosis, situation, personal, sciences
  - ii. prevention, behavior, health, treatments
  - iii. treatment, condition, social, facilities
  - iv. None of the above.
  
5. Effective Health Communication –
  - i. improve the learners' knowledge, attitude & practices.
  - ii. improve the learners' behavior.
  - iii. improve the learners' status.
  - iv. All the above
  - v. None of the above.

**D. Free hand writing: Any two (2X5=10)**

- i. How health behaviors impact on Health Status?
- ii. Importance of Health Communication?
- iii. One Health Issues
- iv. The Bangkok Charter