

KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2025

Marks Scored:

Level : BHI

Year : I

Exam Roll No. :

Time: 30 mins.

Course : HIMS 104

Semester : I

F. M. : 10

Registration No.:

Date : 07 APR 2025

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Select and Mark [X] in the best alternative for each of the questions.

1. _____ is one of the efforts organized by society to protect, promote, and restore people's health.
 Public Health Global Health Epidemiology International Health
2. In 1974 _____ concept came up:
 Lalonde
 Ottawa Charter
 Commission of Social Determinants of Health
 Migration Health
3. The determinants of health deals with all of these components **except**:
 Policies and interventions Physical environments
 Social environment Vulnerability assessment
4. In the determinants of health classification, risk and/or protective behavior lies in:
 Biological Behavioral Physical Social-economic
5. Diabetes is:
 Infectious disease Chronic disease
 Environmental hazard Mental illness
6. From middle 20th century:
 Focused no biomedicine Focused on sanitation
 Focused on waste disposal Focused on immunization
7. All are the principles of primary health care **except**:
 Equity Prevention
 Appropriate technology Cost and financing
8. Depression is _____
 Common mental disorder Severe mental disorder
 Bipolar disorder Psychotic episode
9. The World Health Organization (WHO) reported of having 1 in _____ people will experience a mental or neurological disorder in their lifetime.
 2 4 3 5

10. The continuous process of observing, recording and reporting the activities of an organization or project is termed as _____?
 Evaluation Supervision Monitoring Administration
11. The epidemiological triad in infectious disease deals with all **except**:
 Agent Host Environment Mortality
12. The study relating to the distribution and determinants of health-related events is called:
 Health informatics Health promotion
 Epidemiology Anthropology
13. Pathogenicity is:
 Biological agent Nutrient agent
 Mechanical agent Social agent
14. The component which is associated both with exposure and outcome are:
 Effect modifier Confounder
 Genetic factors Agents
15. Cross-sectional study is:
 Experimental studies Observational studies
 Randomized controlled trial Analytical studies
16. The reproductive health includes all **except**:
 Family planning Safe motherhood
 Life-cycle issue Surgery
17. Evaluation of hypotheses epidemiologically is:
 Descriptive phase Explanatory phase
 Response phase Suspect phase
18. All of them are under-nutrition **except**:
 Protein-energy malnutrition Vitamin A deficiency
 Iron deficiency Overweight and obesity
19. Height-for-age is:
 Stunting Wasting Thinness Obesity
20. The number of live births per 1,000 people in population per year is?
 Crude Birth Rate General Fertility Rate
 Age Specific Fertility Rate Total Fertility Rate

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Level : BHI
Year : I
Time : 2 hrs. 30 mins.

Course : HIMS 104
Semester : I
F. M. : 40

07 APR 2025

SECTION "B"

[2 Q. × 8 = 16 marks]

Attempt *ANY TWO* question.

1. Why should outbreaks be investigated? What are the major steps/phases in an outbreak investigation? Explain any one phase in detail. [2+2+4]
2. What are the impacts of health informatics on Public Health? Discuss two of them in detail. [2+6]
3. List the major principles of management and discuss any three of them in detail. [2+6]

SECTION "C"

[6 Q. × 4 = 24 marks]

Attempt *ANY SIX* question.

4. Define Public Health. Explain briefly any three core functions of Public Health?
5. What are the major determinants of Public Health? Analyse any one disease with its major determinants.
6. Define reproductive health. List down major scope of reproductive health. What are the major problems relating to reproductive health?
7. What are the major causes of mental health disorders? How can you prevent it?
8. Define Epidemiology. Explain briefly epidemiological triad?
9. Define Demography. List out common demographic measures and explain any one of them in detail.
10. Define Environmental Health? List out major "hot topics" in environmental health. What are the major environmental events in the world?

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Marks Scored:

Level : BIT

Year : I

Exam Roll No. :

Time: 30 mins.

Registration No.:

Course : COM 105

Semester : I

F. M. : 10

Date :

SECTION "A"
[20Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate option. Symbols have their usual meaning.

- In an ADC, the Nyquist theorem states that the sampling frequency should be at least:
 Half of the highest signal frequency
 Equal to the highest signal frequency
 Twice the highest signal frequency
 Four times the highest signal frequency
- How many bits are needed to store one BCD digit?
 2-bits 3-bits 4-bits 1-bit
- In the toggle mode, a JK flip-flop has
 $J = 0, K = 1$ $J = 0, K = 0$ $J = 1, K = 1$ $J = 1, K = 0$
- What is the 1's complement of 101100?
 101100 110011 010011 010011
- How much input and output is needed for the demultiplexer?
 Many outputs to one input One input one output
 One input many outputs None
- What is the simplified form of $AB + AB' + A'B$?
 AB $A + B$ $A \oplus B$ 1
- In an asynchronous counter, how do the flip-flops change states?
 Simultaneously
 Sequentially, with each flip-flop triggered by the previous one
 All at once, using a common clock
 Independently, without any synchronization
- Which type of flip-flop is commonly used in asynchronous counters?
 D Flip-Flop T Flip-Flop S-R Flip-Flop JK Flip-Flop
- What is the primary characteristic of a combinational logic circuit?
 It has memory elements
 The output depends only on the present inputs
 It requires a clock signal to function
 The output depends on both past and present inputs

10. In a magnitude comparator, what condition must be met for two binary numbers to be equal?
- The MSB of both numbers must be the same
 - All corresponding bits of both numbers must be identical
 - the sum of both numbers must be zero
 - the difference between both numbers must be odd
11. The resolution of an Analog to digital converter(ADC) depends on:
- The sampling rate
 - the number of bits in the digital output
 - the type of input signal
 - the power supply voltage
12. Simplify the Boolean expression $(A+B)(A+B')$.
- A
 - A+B
 - B
 - A·B
13. Which of the following expressions represents the Boolean function $F(A, B, C) = A + B' C$ in the sum of minterms?
- $F(A, B, C) = \Sigma(0, 2, 3, 4, 5)$
 - $F(A, B, C) = \Sigma(1, 4, 5, 6, 7)$
 - $F(A, B, C) = \Sigma(1, 3, 5, 6, 7)$
 - $F(A, B, C) = \Sigma(2, 4, 5, 6, 7)$
14. The excitation table for a D flip-flop is:
- $Q_{n+1} = D$
 - $Q_{n+1} = Q_n'$
 - $Q_{n+1} = Q_n \oplus D$
 - $Q_{n+1} = 1$
15. Which of the following best describes a state table?
- It shows the output for given inputs in a combinational circuit.
 - It represents the current state and the next state transitions in a sequential circuit.
 - It provides a truth table for Boolean functions.
 - It lists the required flip-flop inputs for state transitions.
16. How do you convert a binary number 1101 to its 2's complement?
- Flip all bits and add 1
 - Add 1 to the binary number
 - Flip all bits
 - Subtract 1 from the binary number
17. _____ is commonly used to store the operating system and firmware.
- SRAM
 - DRAM
 - ROM
 - Flash memory
18. In a ring counter, the output of the last flip-flop is connected to which of the following?
- The clock input of the first flip-flop
 - The data input of the first flip-flop
 - The reset input of the first flip-flop
 - The set input of the first flip-flop
19. What is the decimal equivalent of the hexadecimal number A3?
- 163
 - 173
 - 83
 - 03
20. In a system with both SRAM and DRAM memory, which of the following is NOT true about their behavior and characteristics?
- SRAM is faster than DRAM but consumes more power.
 - DRAM requires periodic refresh to retain data, while SRAM does not.
 - SRAM uses a capacitor to store data, whereas DRAM uses a flip-flop circuit.
 - DRAM is less expensive per bit compared to SRAM, but has slower access times.