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**B.V.Sc. & A.H. (Third Professional) Examination – 2023**  
**Veterinary Public Health and Epidemiology Paper -I**

Time: Three Hours

Maximum Marks: 100

Weightage: 20

Unit-1 (Veterinary Public Health and Food Safety)

Unit-2 (Veterinary Epidemiology)

**Instructions:**

- 1) Attempt all questions
- 2) Answer of all questions is to be written in the space provided along with the question in question booklet.
- 3) Overwriting is not allowed in the objective-type question.

**Q.1 Fill in the blanks.**

(20x 0.5 =10)

- 1.1 The indicator organism to assess the effectiveness of milk pasteurization is \_\_\_\_\_
- 1.2 Double toned milk has a fat percentage of \_\_\_\_\_ %
- 1.3 The headquarters of World Health Organization (WHO) is situated at \_\_\_\_\_
- 1.4 White colour of the milk is due to the presence of \_\_\_\_\_
- 1.5 In High Temperature Short Time (HTLT) method of pasteurization, the milk is heated to 72°C with a \_\_\_\_\_ holding time.
- 1.6 Meat of high quality has ultimate pH at the range of \_\_\_\_\_
- 1.7 The recommended overall light intensity should not be less than \_\_\_\_\_ lux at all inspection points in an abattoir.
- 1.8 An epidemic occurring over a very wide area, crossing international boundaries, and usually affecting a large number of people is known as \_\_\_\_\_
- 1.9 The \_\_\_\_\_ condition of meat results from exhaustion during the period of handling, transport and pre-slaughter of animals, and thus from a depletion of glycogen before slaughter.
- 1.10 A \_\_\_\_\_ variable is a factor other than the one being studied that is associated both with the disease (dependent variable) and with the factor being studied (independent variable).
- 1.11 The term "One Medicine" was coined by \_\_\_\_\_, which calls for a unified approach against zoonoses that uses both human and veterinary medicine.
- 1.12 The constant presence of a disease or an infectious agent within a geographical area without importation from outside is known as \_\_\_\_\_
- 1.13 \_\_\_\_\_ is considered as the smallest spatial unit providing uniform

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conditions for life, which is also known as address of an organism in ecological context.

1.14 The FSSAI has been established under the Food Safety and Standards Act during \_\_\_\_\_

1.15 Maximum level ( $\mu\text{g}/\text{kg}$ ) of Aflatoxin M1 in milk prescribed by Codex Alimentarius Commission is \_\_\_\_\_  $\mu\text{g}/\text{kg}$ .

1.16 The \_\_\_\_\_ calculates the proportion of animals diagnosed with a particular disease that die within a specified time.

1.17 \_\_\_\_\_ involves ongoing data collection, analysis, and interpretation to monitor the occurrence of diseases in animal populations.

1.18 In disease transmission, the basic reproduction number ( $R_0$ ) represents the average number of \_\_\_\_\_ cases generated by one infectious individual in a fully susceptible population.

1.19 \_\_\_\_\_ denotes the place and functional role of a species within a biocenosis or ecosystem.

1.20 \_\_\_\_\_ refers to the level of immunity in a population that provides indirect protection to those who are susceptible to a disease

**Q.2** Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (20x 0.5 = 10)

2.1 Headquarter of World Organization for Animal Health is located at ( )

1. Paris
2. Geneva
3. Rome
4. New Delhi

2.2 Which among the following is considered as the father of modern epidemiology ( )

1. Louis Pasteur
2. Adams Smith
3. John Snow
4. Calvin Schwabe

2.3 The normal range of specific gravity of cattle milk is ( )

1. 1.28 to 1.32
2. 1.34 to 1.38
3. 1.028 to 1.032
4. 1.034 to 1.038

2.4 Case fatality rate is used to measure ( )

1. Infectivity of the pathogen
2. Virulence of the pathogen
3. Pathogenicity of the pathogen
4. Average duration of illness

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- 2.5 Which of the following condition can be attributed to the consumption of contaminated raw milk ( )
1. Brucellosis
  2. Tuberculosis
  3. Listeriosis
  4. All of the above
- 2.6 Which enzyme is used for testing of pasteurized milk ( )
1. Lipase
  2. Lactoperoxidase
  3. Alkaline phosphatase
  4. Amylase
- 2.7 A country is experiencing an outbreak of foodborne illnesses linked to a popular canned food product. The government wants to collaborate with international organizations to establish safety standards for this product. Which global body would be the most suitable for guiding the development of these standards ( )
1. Codex Alimentarius Commission
  2. World Trade Organization (WTO)
  3. World Health Organization (WHO)
  4. International Monetary Fund (IMF)
- 2.8 How does the ISO 9000 series contribute to the meat industry? ( )
1. It provides guidelines for animal welfare practices.
  2. It ensures the traceability of meat products from farm to table.
  3. It focuses on environmental sustainability in meat production.
  4. It establishes quality management standards for processes and customer satisfaction.
- 2.9 The national milk day is celebrated on ( )
1. 5 June
  2. 6 July
  3. 28 September
  4. 26 November
- 2.10 Which of the following is not a rapid platform test for milk ( )
1. Clot-on-boiling test
  2. Sedimentation test
  3. Standard plate count
  4. pH test
- 2.11 The epidemiological measures of effect assess which of the following parameter between an exposure and an outcome. ( )
1. Strength of the causal mechanisms
  2. Strength of reversibility
  3. Strength of association
  4. Strength of confounding factor
- 2.12 Prevalence of brucellosis at one point of time can be determined by ( )
1. Cross-sectional study
  2. Case-control study
  3. Cohort study
  4. Meta-analysis

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- 2.13 All are true for point source epidemic except ( )
1. Epidemic curve rises and falls sharply
  2. Clustering of cases within a short period of time
  3. Person-to-person transmission for long duration
  4. All cases usually develop within almost similar incubation period
- 2.14 A condition where the causative agent is present but there is no transmission is known as ( )
1. Prevention
  2. Elimination
  3. Eradication
  4. Surveillance
- 2.15 A zoonotic pathogen is having the basic reproduction number ( $R_0$ ) close to 0 denotes. This denotes ( )
1. Minimally transmissible within human populations
  2. Highly transmissible within human populations
  3. Moderately transmissible within human populations
  4. No correlation with the transmissibility of pathogens
- 2.16 Which of the following is associated with the spoilage condition known as "bone taint" ( )
1. *Clostridium* spp.
  2. *Pseudomonas* spp.
  3. *Bacillus* spp.
  4. *Listeria* spp.
- 2.17 The enterotoxin of which among the following foodborne pathogen is heat stable? ( )
1. *Vibrio cholera*
  2. *Listeria monocytogenes*
  3. *Staphylococcus aureus*
  4. *Salmonella enterica*
- 2.18 Which among the following organism have the lowest water activity ( $a_w$ ) value for growth ( )
1. *Clostridium botulinum*, type E
  2. *Pseudomonas* spp.
  3. *Bacillus subtilis*
  4. *Staphylococcus aureus*
- 2.19 "Fiat panis" was selected as the FAO motto by the first Director-General, Sir John Boyd Orr, which means ( )
1. Let there be bread
  2. Let there be kindness
  3. Let there be welfare
  4. Let there be health
- 2.20 Which of the following epidemiological studies have only people who are initially free of the disease of interest? ( )
1. Cross-sectional study
  2. Prevalence surveys
  3. Case-control study
  4. Cohort study

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**Q.3** Attempt any ten out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Milk hygiene.

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3.2 Landscape epidemiology.

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3.3 Biotope.

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3.4 Milk pasteurization.

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3.5 Nidality of disease.

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3.6 Meat hygiene.

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3.7 Veterinary Epidemiology.

3.8 Milk-borne intoxication.

3.9 Horizontal transmission of disease

3.10 Random sampling.

3.11 Farm Biosecurity

3.12 Sanitary and phytosanitary measures

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**Q.4** Attempt any six out of the following eight questions. Answer of each question should be in 8 to 10 lines.

(6 x 6 = 36)

**4.1** Explain the risk analysis method described by Codex Alimentarius

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**4.2** Describe the occupational health hazards in abattoir and meat plants

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4.3 Write down the various objectives of veterinary epidemiology

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4.4 Explain different routes of disease transmission

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4.5 Classify the low-risk and high-risk material generated in an abattoir and its hygienic disposal

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4.6 Explain the requirements and judgements during postmortem inspection of carcass in abattoir.

4.7 Describe the procedures for quality control of milk and milk products.

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4.8 Explain the role of veterinarians in public health

**Q.5. Answer the following question 1-2 pages (Attempt any two) (2x12 = 24)**

- 5.1 Explain the principles of hazard analysis and critical control points (HACCP) system. Elaborate the use of HACCP in poultry slaughter unit with appropriate flow chart.
- 5.2 Differentiate between 'foodborne infections', 'foodborne toxoinfections', and 'foodborne intoxications' linked to animal-origin foods. Provide illustrations of at least two pathogens under each classification.
- 5.3 Explain the diverse surveillance methods applicable in animal health surveillance programs. Additionally, discuss India's ongoing disease surveillance program in this context