Please write your Roll Number above this line

B.V.Sc. & A.H. (Second Professional) Examination – 2023
Veterinary Microbiology Paper -I

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-1 (General & Systematic Veterinary Bacteriology)
Unit-2 (Veterinary Mycology)
Unit-3 (Microbial Biotechnology)

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. **(20x0.5 = 10)**

1.1 The colonies of _____ spp. have a fried egg appearance.

1.2 The presence of periplasmic flagella is a characteristic feature of _____.

1.3 The cutaneous form of glanders is called _____.

1.4 _____ is commonly used as an enrichment media for the isolation of *Salmonella*.

1.5 The metabolically inactive infectious form of chlamydia is called _____.

1.6 Weil-Felix reaction is used for the diagnosis of _____ using *Proteus* organisms.

1.7 The most commonly used stain for the fungal identification is _____.

1.8 The first vaccines against fowl cholera and anthrax were developed by _____.

1.9 The LPS present in gram negative bacteria is_____toxin in nature.

1.10 _____ is a measure of the degree of pathogenicity of a microorganism.

1.11 The _____ blotting technique uses antibodies to characterize proteins.

1.12 Enzymes which cut the DNA sequence at specific site are known as_____.

1.13 In blue white screening, the recombinant clones will be_____ in colour.

1.14 _____ vector is a hybrid of plasmid and phage.

Donot write across this line

1.15 _____ is a commonly used fluorescent DNA binding dye used in real time PCR.

1.16 Brooder's pneumonia is a disease of young chickens caused by the fungal species _____.

1.17 The mycotoxicosis caused by the ergopeptide alkaloids of *Claviceps purpurea* colonizing the rye grasses is called as _____.

1.18 _____ fungal species is the most common cause of avian ringworm or favus.

1.19 Tumbling motility, cold enrichment and circling disease are the characteristics of _____ bacterial species.

1.20 Those plasmids which confer bacterial resistance against antibiotics, metals, etc. are called _____.

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:

(20x0.5 = 10)

2.1 The bacteria having tufts of several flagella at one pole are called ( )
1. Monotrichous
2. Lophotrichous
3. Amphitrichous
4. Peritrichous

2.2 Bacteria which does not require O_2 for growth, but grows better in its presence is called as ( )
1. Obligate anaerobe
2. Obligate aerobe
3. Facultative anaerobe
4. Microaerophile

2.3 The organisms that are generally harmless commensals in their normal habitats but that can cause disease when they gain access to other sites or tissues are called ( )
1. Obligate pathogen
2. Opportunistic pathogen
3. Saprophyte
4. Parasite

2.4 Choose the incorrect one ( )
1. Albert's staining for metachromatic granules
2. Leifson's staining for cell wall
3. Hiss method of staining for capsule
4. Wirtz-Conklin/ Shaeffer-Fulton staining for spores

2.5 Greasy pig disease of swine is caused by ( )
1. *Staphylococcus hyicus*
2. *Mycoplasma hyorhinis*
3. *Streptococcus suis*
4. *Actinobacillus suis*

2.6 Which among the following is neurotoxic clostridium ( )
1. *Clostridium tetani*
2. *Clostridium perfringens*
3. *Clostridium septicum*
4. *Clostridium chauvoei*

2.7 Metachromatic granules or volutin granules are the characteristic of which bacterium ( )
1. *Mycobacterium tuberculosis*
2. *Corynebacterium diphtheriae*
3. *Pseudomonas aeruginosa*
4. *Pasteurella multocida*

2.8 The pattern of IMViC tests for *E.coli* is ( )
1. + − + −
2. − − + +
3. + + − −
4. − + − +

2.9 The test performed to identify *Brucella* in milk samples ( )
1. ABRT
2. RBPT
3. SAT
4. BRUCELLIN

2.10 Q fever is a highly infectious disease of domestic animals caused by
1. *Moraxella bovis* ( )
2. *Coxiella burnetii*
3. *Ehrlichia ruminantium*
4. *Ehrlichia canis*

2.11 The smallest organisms lacking cell walls that are capable of self-replication
1. *Rickettsia*
2. *Chlamydia*
3. *Mycobacterium*
4. *Mycoplasma*

2.12 The blotting technique used to separate and characterize DNA ( )
1. Western blotting
2. Northern blotting
3. Southern blotting
4. Eastern blotting

2.13 Which of the following is a negative selection method for the screening of recombinants? ( )
1. Sanger sequencing
2. Genetic transformation
3. Antibiotic resistance marker
4. Blue-white screening

2.14 The following constituent of the cell wall confers acid fastness to *Mycobacterium* ( )
1. Mycolic acid
2. Dipicolinic acid
3. Mycosides
4. N-glycolyl-muramic acid

2.15 Which among the following can be used to demonstrate fungal elements in tissue sections? ( )

1. Periodic acid-Schiff (PAS)
2. Gram staining
3. Modified Ziehl-Neelsen
4. India ink

2.16 Example of nucleotide database is ( )

1. GenBank
2. Swiss-Port
3. PIR
4. TrEMBL

2.17 Commonly used restriction enzyme in genetic engineering is ( )

1. Type I
2. Type II
3. Type III
4. Type IV

2.18 BLAST means ( )

1. Bioinformatic Local Alignment Search Tool
2. Basic Large And Small sequence Search Tool
3. Bioinformatic Large And Small sequence Search Tool
4. Basic Local Alignment Search Tool

2.19 Which of the following are asexual spores of fungi ( )

1. Ascospores
2. Basidiospores
3. Zygospores
4. Sporangiospores

2.20 The overeating disease or pulpy kidney disease in sheep and goats is caused by ( )

1. *Clostridium perfringens* Type A
2. *Clostridium perfringens* Type B
3. *Clostridium perfringens* Type C
4. *Clostridium perfringens* Type D

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

3.1 Mutagens

3.2 Toxoid

3.3 Sporangiospores

3.4 Strangles

3.5 Strauss reaction

3.6 Nagler's reaction

3.7 CAMP test

3.8 Proteomics

3.9 cDNA library

3.10 . Hybridization probe

3.11 Bacteremia

3.12 Thrush

Q.4 Attempt any <u>six</u> out of the following eight questions. Answer of each question should be in 8 to 10 lines. (6 x 6.0 = 36)

4.1 Difference between Gram positive and Gram negative bacteria

4.2 Bacterial growth curve

4.3 Western blotting technique

4.4 Properties of an ideal vector

4.5 Laboratory diagnosis of dermatophytosis

4.6 Principle and steps of Polymerase Chain Reaction

4.7 Diagnosis and control of Haemorrhagic Septicaemia

4.8 Enlist the various mycotoxicoses and describe any two of them

Q.5 Answer the following question in 1-2 pages (attempt any two).

(2x12.0 = 24)

5.1 Write in detail about the Brucellosis in Cattle including its etiology, morphology, cultural characteristics, pathogenesis, clinical symptoms, diagnosis, prevention and control.

5.2 What is nucleic acid hybridization. Describe the various types of nucleic acid hybridization techniques in detail (with diagrammatic illustrations).

5.3 Write in detail about the Anthrax including its etiology, morphology, cultural characteristics, pathogenesis, clinical symptoms, diagnosis, prevention and control in domestic animals.

Q. No. .....