

To be filled by the candidate)

Booklet S. No. \_\_\_\_\_

Roll No. (In figures) \_\_\_\_\_

Roll No. (In words) \_\_\_\_\_

Name of the Candidate : \_\_\_\_\_

Father's Name : \_\_\_\_\_

Center of Examination : \_\_\_\_\_

**Total No. of Questions : 50**

**Paper Code-2609**

**Name of Examination- Senior Resident/Specialist Tutor Entrance 2026  
Specialty-Microbiology**

**Time Allowed : 90 Minutes**

**Maximum Marks : 200**

**IMPORTANT NOTE:**

- (i) OMR Answer Sheet will be supplied by the Examination Centre Superintendent for answering the questions.
- (ii) Use **Blue/Black Ink/ Ball Pen only**, to darken the appropriate circle in the OMR Answer Sheet.
- (iii) Darken one circle deeply for each question in the OMR Answer Sheet, as faintly darkened circle might be rejected by the Optical Scanner.
- (iv) Darkening of more than one circle shall be rejected by the scanner. **Over-writing, cutting, erasing or use of White Fluid is not allowed.**
- (v) Before dealing with the question paper, fill-up the required information with Blue/Black Ball Pen correctly both in the Question Booklet and in the OMR Answer Sheet.
- (vi) Do not fold the OMR Answer Sheet nor put any mark here and there to avoid rejection by the Optical Scanner.
- (vii) Write Roll. No. carefully on the OMR Answer Sheet and darken the appropriate circle properly.
- (viii) **Each question carries Four Marks while 1 mark shall be deducted for each incorrect response.**
- (ix) **Use of Calculator is not allowed.**
- (x) **No over-writing, cutting, erasing or use of white fluid is allowed.**
- (xi) Rough work be done on the sheet(s) at the end.
- (xii) **MOBILE TELEPHONES (EVEN ON SWITCH-OFF MODE) AND SUCH OTHER ELECTRONIC DEVICES ARE NOT ALLOWED INSIDE THE EXAMINATION HALL.**
- (xiii) The question paper-booklet will be retained by the candidate after the entrance test is over.

**Q1** A blood culture bottle flags positive within 8 hours. Gram staining shows Gram-positive cocci in clusters. The most appropriate next laboratory step is:

- a) Report as *Staphylococcus aureus*
- b) Perform coagulase test directly from bottle
- c) Subculture on blood agar and MacConkey agar
- d) Start vancomycin sensitivity testing

Answer: C

**Q2** A sputum sample is rejected if:

- a) It is thick and purulent
- b) It contains >10 epithelial cells/LPF
- c) It shows neutrophils on microscopy
- d) It is early morning sample

Answer: B

**Q3** A 10-year-old boy presented with haemorrhagic colitis and *Escherichia coli* grown on stool culture was suspected to be responsible for the manifestations. Which of the following is Incorrect regarding the causative agent?

- a) O157:H7 is most common serotype responsible
- b) Infective dose is very low
- c) It is most common cause of traveller diarrhoea
- d) Pathogenesis is due to verocytotoxin

Answer: C

**Q4** Please read below mentioned statements carefully:

1. Deoxycholate citrate agar is used as a selective media for growth of *Shigella*.
2. Typhoidal Salmonella include S.Typhi, S. Paratyphi A, B and C.
3. Yersiniosis can be caused by *Y. pseudotuberculosis*.
4. Cold enrichment is used for growth of *Y. pestis*.

Find the correct option about above mentioned statements:

- a) statement 2, 3, 4 are true, 1 is false.
- b) statements 1, 3 & 4 are true, 2 is false.
- c) statements 1, 2 & 3 are true, 4 is false.
- d) Statements 1, 2 & 4 are true, 3 is false.

Answer: C

**Q5** A 10-year-old boy presented to emergency OPD with stepladder pattern of fever with chills and abdominal pain of 5 days duration. On examination he had hepatosplenomegaly and relative bradycardia. He was on antibiotic for last 2 days. His blood culture was sterile. Which of the following is the best investigation to rule out enteric fever in this case?

- a) Duodenal aspirate culture
- b) Stool culture
- c) Urine culture
- d) Bone marrow culture

Answer: D

**Q6** Multiple cases of sudden onset painless watery diarrhoea were reported from a locality. Majority of them have non bilious, slightly

cloudy, watery mucus flakes, inoffensive odour and non-blood stained resembling rice water. Which of the following statement is **INCORRECT** regarding the causative agent?

- a) Cholera toxin is responsible for the disease manifestation.
- b) Organism exhibit darting motility
- c) TCBS agar is a selective media for growth.
- d) Antibiotics are always indicated in the treatment of disease

Answer: D

**Q7** Please read below mentioned statements regarding *Burkholderia* carefully:

- 1. They are resistant to polymyxin B
- 2. Shows bipolar staining
- 3. Ashdown's medium is used as a selective medium
- 4. Cause of Shanghai fever

Find the correct option about above mentioned statements:

- a) statement 2, 3, 4 are true, 1 is false.
- b) statements 1, 3 & 4 are true, 2 is false.
- c) statements 1, 2 & 3 are true, 4 is false.
- d) Statements 1, 2 & 4 are true, 3 is false.

Answer: C

**Q8** A 2-year-old child was brought to emergency with complaint of fever and paroxysm of cough (each consisting of 5 to 10 repetitive violent spasmodic coughs, often within a single expiration which ends with an audible sound) for last 7 days. The

child was unimmunized. Which of the following etiological agent infection can be prevented if child had taken vaccine as per National Immunization schedule?

- a) *Bordetella pertussis*
- b) *Mycoplasma pneumoniae*
- c) *Chlamydia pneumoniae*
- d) *Escherichia coli*

Answer: A

**Q9** The blood culture taken in BacT/Alert (automated blood culture system) bottle from a patient suffering from undulating fever with night sweat, arthralgia and hepatosplenomegaly revealed presence of gram-negative coccobacilli after 5 days of incubation. The culture isolate grown on blood agar was oxidase and urease positive. Which of the following is likely organism?

- a) *Brucella spp.*
- b) *Pseudomonas spp.*
- c) *Escherichia coli.*
- d) *Klebsiella pneumoniae.*

Answer: A

**Q10** Please read below mentioned statements carefully:

- 1. Endoflagella do not protrude outside but present in periplasmic space in the spirochetes.
- 2. Major human pathogen in spirochetes are *Treponema, Borrelia and Leptospira.*

3. Relapsing fever can be transmitted by louse or tick bite.
4. The causative agent of lyme's disease is *Borrelia vincentii*.

Find the correct option about above mentioned statements:

- a) statement 2, 3, 4 are true, 1 is false.
- b) statements 1, 3 & 4 are true, 2 is false.
- c) statements 1, 2 & 3 are true, 4 is false.
- d) Statements 1, 2 & 4 are true, 3 is false.

Answer: C

**Q11** A CSF sample from a neonate suspected to suffering from meningitis showed presence of gram-positive bacilli with tumbling motility at 25°C. Which of the following is the causative agent:

- a) *Listeria monocytogenes*
- b) *Corynebacterium spp*
- c) *Bacillus spp*
- d) *Clostridium spp*.

Answer: A

**Q12** A patient presented with fever, headache, maculopapular rash, eschar on forearm with axillary lymphadenopathy. His Weil felix test titre results revealed high titre of antibody to only OXK Antigen, while no antibody detected against OX2 & OX19 antigen.

Based on these findings which of the following is likely diagnosis:

- a) Epidemic typhus
- b) Endemic typhus
- c) Scrub typhus
- d) Rickettsial pox

Answer: C

**Q13** Please read below mentioned statements carefully:

1. Pseudomembranous colitis is caused by *Clostridioides difficile*
2. Rapid urease test is used in diagnosis of *H.pylori* infection.
3. Skirrow's selective medium is used for *H.pylori* culture
4. *Campylobacter* are gram negative curved bacilli.

Find the correct option about above mentioned statements:

- a) statement 2, 3, 4 are true, 1 is false.
- b) statements 1, 3 & 4 are true, 2 is false.
- c) statements 1, 2 & 3 are true, 4 is false.
- d) Statements 1, 2 & 4 are true, 3 is false.

Answer: D

**Q14** Barrel shaped, bile stained, approximately 50 x 25 micrometre size, eggs with mucus plugs at end were found in stool examination of a 10-year-old child suffering from diarrhoea. On sigmoidoscopy of same patient reveal coconut cake rectum appearance. What is the infective stage of the suspected parasite?

- a) Embryonated Egg
- b) Freshly passed egg in stool
- c) Larva
- d) Adult worm

Answer: A

**Q15** On investigation of a 12 years old child suffering from diarrhoea and anaemia, stool examination reveals presence of some helminthic eggs. The eggs were found to float in saturated salt solution. Which of the following is the causative organism?

- a) *Fasciolopsis buski*
- b) *Taenia solium*
- c) *Trichuris trichiura*
- d) *Watsonius watsoni*

Answer: C

**Q16** Its commonly said for which worm infestation " You had the infection as a child, you have it now and you will again get it when you have children".

- a) *Enterobius vermicularis*
- b) *Ascaris lumbricoides*
- c) *Ancylostoma duodenale*
- d) *Trichuris trichiura*

Answer: A

**Q17** A child, 8-year-old suffering from intense excoriation in perianal area. NIH Swab taken from perianal area revealed following structure on wet mount examination. What is infective stage of this parasite?



- a) Embryonated egg
- b) Adult worm
- c) Larva
- d) Un-embryonated egg

Answer A

**Q18** A patient suffering from myositis with myalgia and weakness. His blood investigation reveals eosinophilia. In muscle biopsy taken from bicep reveal some spiral larval form approximately 1mm long inside muscle fibre with long axis along the length of muscle fibre. What is combination of optimum host and infective stage of parasite responsible for disease?

- a) Pig-First stage larva
- b) Dog-Egg
- c) Sheep-Larva
- d) Horse-Egg

Answer A

**Q19** While reporting ZN-stained slide as per National tuberculosis elimination programme, you are finding 1-10 acid fast bacilli/oil

immersion field. How many numbers of field you should see before labelling slide as Positive 2+ grading?

- a) 10
- b) 20
- c) 50
- d) 100

Answer C

**Q20** Slit skin smear of patient suffering from leprosy was seen. The grading of 6 smears examined were 1+, 2+, 3+, 2+, 2+ and 2+. What is the bacteriological index of this patient?

- a) 1+
- b) 2+
- c) 3+
- d) 4+

Answer B

**Q21** Which of the following statement related to air borne transmission-based precaution is FALSE?

- a) Airborne precautions are designed to prevent the transmission of diseases dust particles containing of size  $>5 \mu\text{m}$
- b) Airborne precautions are indicated in case of HIV infected person with cough fever and pulmonary infiltrate
- c) Isolation room designed for airborne transmission-based precautions preferred should have 12 air exchanges per hour
- d) Isolation room designed for airborne transmission-based precaution should

be in negative air pressure in relation to surrounding rooms.

Answer A

**Q22** A Health care worker coming to you saying that he has taken 2 doses of Hepatitis B vaccine 5 years back but no documentation. He wants to know how he should continue up with vaccination against Hepatitis B. Choose most appropriate vaccination strategy, according to CDC recommendation.

- a) Time elapsed since last vaccine dose 5 years, hence give 2 vaccine dose of hepatitis B
- b) Since no documentation of the previous two vaccine doses start the fresh vaccination series
- c) Check for antibody titers and give a booster dose of vaccine if not protected
- d) Irrespective of the time gap, give 3rd dose of vaccine

Answer B

**Q23** You want to advice follow up visits for HIV testing to a case of needle stick injury, suggest correct combinations of timing according to latest NACO guidelines?

- a) 6 weeks, 3 months and 12 months
- b) 6 weeks, 3 months and 6 months
- c) 3 months and 6 months
- d) 6 weeks, 6 months and 12 months

Answer B

**Q24** Which of the following is not component of standard precautions?

- a) Hand Hygiene
- b) Personal protective equipment's
- c) Appropriate biomedical waste segregation and disposal
- d) Airborne precautions

Answer D

**Q25** CSF (cerebrospinal fluid) sample from suspected meningitis non-diabetic patient revealed highly elevated CSF pressure, total leucocyte count of >200/cubic mm (predominately neutrophils), with glucose of 20mg% and total protein of 500mg/dl. Most likely CSF picture is of

- a) Normal patient
- b) Pyogenic meningitis
- c) Viral Meningitis patient
- d) Tubercular meningitis patient

Answer B

**Q26** What is the best parameter to determine the infectivity in HBsAg positive health care worker?

- a) HBV DNA
- b) HBeAg
- c) Anti HBc IgM antibody
- d) Anti HBs Antibody

Answer A

**Q27** In an outbreak investigation hospital microbiologist and epidemiologist need to determine strain relatedness among bacterial isolates from same species. All of the

molecular techniques will be helpful EXCEPT.

- a) DNA finger printing
- b) PCR-RFLP
- c) REP-PCR
- d) Real time PCR

Answer D

**Q28** All of the following constitute methods of detecting the product of real time amplification EXCEPT.

- a) Use of SYBR Green1 dye
- b) Use of 3rd Generation DNA binding dye
- c) Use of Taqman probe
- d) Use of Reverse hybridization

Answer D

**Q29** A sexually active man presented with sign and symptoms of urethritis (suspected to be due to *N. gonorrhoeae*). Which of the following is diagnostic test of choice and sample collection method?

- a) Test of choice: Nucleic acid amplification technique, Sample: approximately 20-30ml of **initial stream** of urine collection **without** pre-cleaning of genital area.
- b) Test of choice: Nucleic acid amplification technique, Sample: approximately 20-30ml **of last void urine** sample collection **without** pre-cleaning of genital area.
- c) Test of choice: Nucleic acid amplification technique, Sample: approximately 20-30ml of **initial stream** of urine collection **with pre-**

**cleaning** of genital area with sterile water.

- d) Test of choice: Nucleic acid amplification technique, Sample: approximately 20-30ml of **initial stream** of urine collection **with pre-cleaning** of genital area disinfectant.

Answer A

**Q30** Which of the following statement regarding urethral discharge is most **INACCURATE**?

- a) Presence of infection is more likely to asymptomatic in female as compared to males
- b) For collection of specimens: Calcium alginate swabs are generally less toxic for HSV, gonococci, mycoplasmas than cotton swab treated with charcoal.
- c) Trichomonas from infected male can be recovered from first few drops of urine.
- d) For collection of urethral specimen in suspected case of urethritis due to chlamydia, a swab is inserted 2cm into urethra and rotated gently before withdrawing.

Answer B

**Q31** Throat swab remaining moist can be used for cultivation of microorganism if proceed within 4 hours of collection. After that period, transport medium is required to maintain viability and prevent overgrowth of contaminating organisms. However, which of

following organism remains viable on dry swabs as long as 48 to 72hrs and such organism throat swabs can be placed in glassine paper envelopes for mailing or transport to a distant laboratory.

- a) *Streptococcus pyogenes*  
b) *Corynebacterium diphtheriae*  
c) *Candida spp*  
d) *Mycoplasma pneumoniae*

Answer A

**Q32** Which of the following organism is NOT usually associated with chronic meningitis?

- a) *HSV*  
b) *Streptococcus pneumoniae*  
c) *Cryptococcus neoformans*  
d) *Histoplasma capsulatum*

Answer B

**Q33** Which of the following organism and mechanism of Gastrointestinal infection caused by it is **INCORRECT**?

- a) *Campylobacter jejuni*-Enterotoxin  
b) *Rotavirus*-Attachment Within or Close to Mucosal Cells/Adherence  
c) *Bacillus cereus*-Neurotoxin  
d) *Balantidium coli*-Enterotoxin

Answer D

**Q34** Blood culture collected from patient at 2pm, 8pm, 12 midnight and 6am yielded growth of same bacteria in sample collected at 2pm and 12 midnight only, while sample collected at other times were sterile. There was

no antibiotic intake by patient during this time and patient was only on antipyretic drugs. All of the following conditions may lead to this type of Bacteraemia EXCEPT?

- a) Undrained abscess
- b) Bacterial endocarditis
- c) Localised Pyogenic arthritis
- d) Pneumonia

Answer B

**Q35** Simultaneously equal volume of blood was collected from central line (CL) and peripheral line (PL) of a ICU patient for blood culture. Time to positivity in CL and PL was 6 hrs and 9 hrs respectively. Later culture from both grew *Staphylococcus epidermidis*. Which of the following is correct regarding this patient?

- a) It's a colonization of central line
- b) It's a central line related blood stream infection
- c) As both CL and PL grew *Staphylococcus epidermidis* it's a commensal of skin
- d) Source of blood stream infection is other than central line

Answer: B

**Q36** Hepatitis B Pre-core Antigen and Hepatitis B virus DNA was raised in serological sample received in the laboratory. Which of the following condition will not explain these results?

- a) Acute Active hepatitis B
- b) Chronic active hepatitis B

- c) Super carrier hepatitis B
- d) Pre-core mutant hepatitis B

Answer D

**Q37** The Isolator is a lysis centrifugation system commercially available for blood culture. In which of the following microbial blood stream infection this system is more useful compared to conventional blood culture system?

- a) *Streptococcus pneumoniae*
- b) *Listeria monocytogenes*
- c) *Haemophilus influenzae*
- d) *Filamentous fungi*

Answer D

**Q38** As a part of antimicrobial stewardship programme laboratory decided to intimate blood culture microscopy report to clinician at the earliest. However, many blood culture bottles flagged by the instrument as positive but Gram stain was not able to reveal any organism in day-to-day practice, while culture shows growth on subsequent days. Which of following staining technique or method can be most useful to increase the rate of microorganism detection in direct smear of flagged positive blood culture bottles?

- a) Acridine orange staining
- b) Methylene blue staining
- c) Wet mount examination
- d) Gram staining with after methanol fixation

Answer A

**Q39** Some respiratory pathogens evade the host immune system by multiplying within host cells. All of the following is example of such pathogens EXCEPT.

- a) *Chlamydomyphila pneumoniae*
- b) *Legionella*
- c) *Pneumocystis jiroveci*
- d) *Streptococcus pneumoniae*

Answer D

**Q40** Which of the following combination of bacteria and type of motility described is **INCORRECT**?

- a) *Listeria*-Tumbling motility
- b) *Mycoplasma*-Gliding motility
- c) *Spirochete*-stately motility
- d) *Vibrio cholerae*-Darting motility

Answer C

**Q41** Which of the following statement is **NOT** correct?

- a) Metachromatic granules seen in *Corynebacterium diphtheriae* are example of intracytoplasmic inclusion bodies.
- b) Monotrichous flagella is seen in *Vibrio cholerae*
- c) Pleomorphism is seen in *Proteus spp.*
- d) Formation of surface pellicle is due to presence of flagella in bacteria.

Answer D

**Q42** Which of the following statement is **NOT** correct?

- a) Moist heat destroys microorganisms by irreversible coagulation,

denaturation of enzymes and structural proteins.

- b) Glutaraldehyde commonly used as high level of disinfectant
- c) Autoclave tape act as chemical indicator for sterilization control
- d) *Bacillus pumilus* is used as a biological sterilization control filtration.

Answer D

**Q43** Which of the following statement is **NOT** correct?

- a) Contamination rate is less in case of real time PCR compared to conventional PCR
- b) Thermocycler instrument is essential requirement in Loop mediated isothermal amplification technique
- c) Line probe assay is used in diagnosis of Tuberculosis
- d) Taq Man probes are type of hybridization probes.

Answer B

**Q44** Which of the following is the Key cytokine involved in type IV hypersensitivity reaction?

- a) IFN (Interferon)-Gamma
- b) IL(Interleukin)-2
- c) MIF (Migration inhibition factor)
- d) GM-CSF (Granulocyte-Monocyte Colony stimulating Factor)

Answer A

**Q45** In which of the following immunodeficiency disorder

predominant defect is at the level of phagocytosis?

- a) Hyper IgM Syndrome
- b) DiGeorge Syndrome
- c) Wiskott Aldrich Syndrome
- d) Job's Syndrome

Answer D

**Q46** What is the detection limit of GeneXpert for *M. tuberculosis complex*:

- a) One bacillus/ml of specimen
- b) 2 to 10 bacilli /ml of specimen
- c) 100 bacilli /ml of specimen
- d) 131 bacilli /ml of specimen

Answer D

**Q47** Which of the following combination is **NOT** correctly mentioned for leprosy?

- a) Multibacillary disease: Lepromatous leprosy
- b) CMI adequate: Tuberculoid leprosy
- c) Type IV hypersensitivity: Lepra reaction type I
- d) Type II hypersensitivity: Lepra reaction type II

Answer D

**Q48** Which of the infective agent and skin & soft tissue infection combination is **INCORRECTLY** matched?

- a) *T. pallidum*: hard chancre
- b) *Mycobacterium ulcerans*: Erysipeloid
- c) *S. aureus*: Bullous impetigo/ecthyma
- d) *Yersinia pestis*: Bubonic plague

Answer B

**Q49** Which of the virus and vaccine type combination is **INCORRECTLY** matched?

- a) Hepatitis B: Subunit vaccine
- b) Mumps: live attenuated vaccine
- c) Small pox: live attenuated vaccine
- d) Mumps: Inactivated vaccine

Answer D

**Q50** Injection site abscess from a patient was inoculated on culture medium. The growth was obtained within 7 days of inoculation. Which of the following could be likely organism

- a) *M. marinum*
- b) *M. kansasii*
- c) *M. fortuitum*
- d) *Mycobacterium avium intercellulare complex*

Answer C

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