

Staphylococcus aureus

B1. A 35 year old female came to the surgical OPD with breast abscess. Gram stained smear of the pus sample is focused here and blood agar plate is kept.

1. What lab investigation do you order to confirm the etiology? Which is the ideal specimen to be send? (2)
2. a) Comment on the smear. (1)
b) What could be the organism? (1/2)
3. a) Which test is commonly done to identify the pathogenic species?
b) What are the different methods of doing the test and what do they detect? (3)
4. Describe the type of hemolysis seen on blood agar. (1)
5. How will you treat this condition and what is the drug of choice? (1½)
6. If the organism is resistant to the above drug, which drug can be used? (1)





B2. A 20 year old male was brought to the hospital with complaints of frequent passage of loose scanty faeces mixed with blood and mucus, associated with abdominal cramps and vomiting. He was febrile.

1. Which is the commonest bacterium causing dysentery? What is the infective dose? (2)
2. Name 4 species of this bacteria (2)
3. Which is the specimen collected for laboratory diagnosis? (1)
4. Name one transport medium and enrichment medium each used for the specimen. (2)
5. Write one microscopic and macroscopic difference each between bacillary and amoebic dysentery (2)
6. Describe the colonies on MacConkey agar which is kept. (1)

Bacterial dysentery

Shigella



Typhoid

B3. An 18 year old male patient presented with complaints of irregular fever of one week duration. On examination, there was mild hepatosplenomegaly, coated tongue and relative bradycardia.

1. What is the most probable diagnosis? (1)
2. Name the etiological agents. (2)
3. List 4 important specimens which can be collected for lab diagnosis? (2)
4. Which investigation is done to confirm the diagnosis? (1)
5. Most popularly done serological test is kept.
 - a) What type of serological reaction is it? (1)
 - b) Which are the parameters detected by this test? (2)
6. Antibiotic sensitivity test (ABST) for this patient is kept. Which method of ABST is employed here? (1)



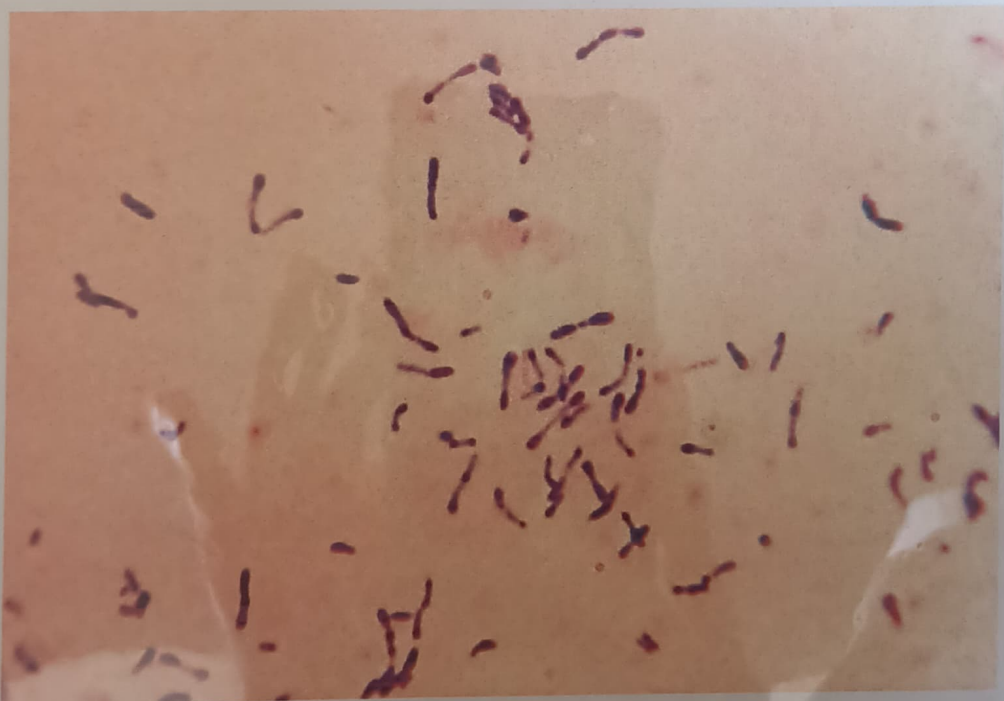




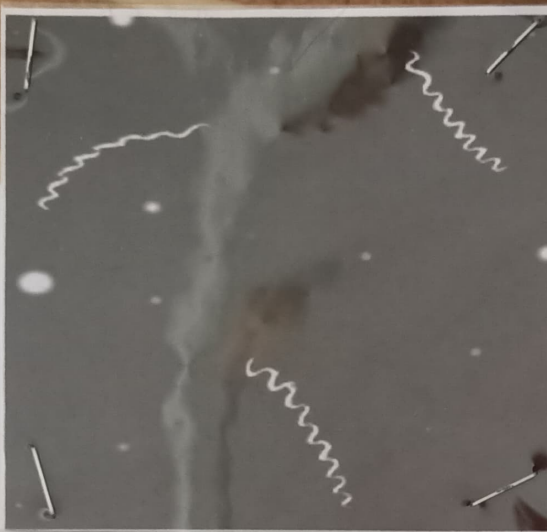
B4. A 5 year old child presented to paediatrics OPD with complaints of pain in the throat, difficulty in swallowing and low grade fever for the past 2 days. On examination greyish-white membrane is present over the tonsillar pillars. Immunisation status of the child is unknown

1. What is the most probable diagnosis and the causative agent? (2)
2. Which specimen do you collect in this patient? (2)
3. A picture of Gram stain of the specimen is kept. Describe the morphology of the microorganism? (2)
4. Specimen collected from the patient was inoculated into the given culture medium.
 - a) Identify the culture medium? (1)
 - b) What type of medium is this? (1)
5. What treatment should be given immediately? What is the purpose? (2)

Diphtheria







Syphilis - *Treponema pallidum*

B5. A 35 year old male came to the Dermatology OPD with a painless ulcer on his penis. Inguinal lymph node was palpable.

Dark ground microscopic finding of the specimen is kept. Routinely performed serological test is also displayed.

1. What is your diagnosis? Name the causative agent. (2)
2. Describe the morphology of the bacteria. (2)
3. Which is the antigen used in the serological test? Name another test which can be performed using the same antigen? (2)
4. Name two specific test which can be done for this disease. (2)
5. Do you need to rule out any other infection in this patient? Why? (2)

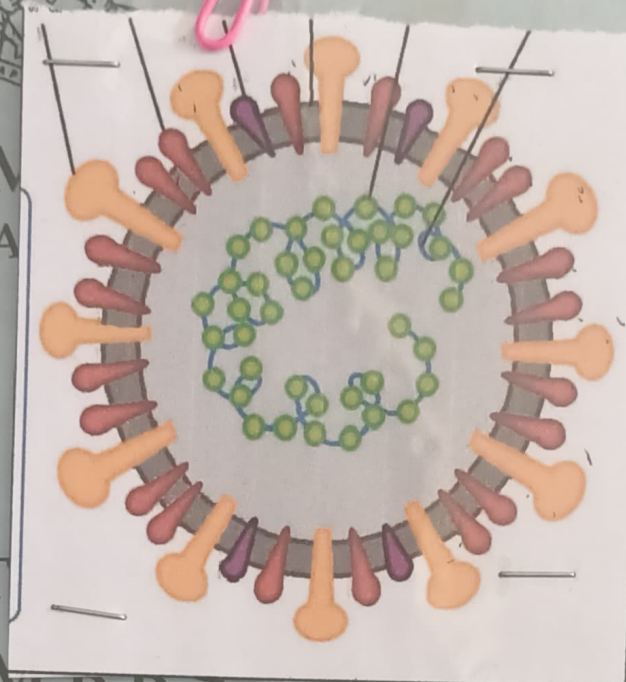


GOVERNMENT M
ERNA

DEPARTMENT

IInd M D D S

PATHOLOGY RECORD



V4.

1. Identify the spotter. Describe the structure (2 ½)
2. Mention one important mode of transmission? (1/2)
3. Name 2 preferred specimens used for lab diagnosis. How are they transported? (1 ½)
4. Name 2 popularly used tests for the diagnosis (2)
5. What do you mean by "SMS" in relation to this? (1 ½)
6. Name the type of mask which should be used by a healthcare worker in following situation (1)
 - Aerosol generating procedure (AGP)
7. Name 2 vaccines commonly used in India against this (1)

COVID -19

B6. A 50 year old male with pre-existing heart disease came to OP with persistent fever, tiredness, and night sweats. He had undergone a tooth extraction recently. O/E there were signs of heart failure

1. What is your provisional diagnosis? Give reason. (2)
2. Name four typical etiological agents of this condition. (2)
3. What is the most important bacteriological investigation you would like to do? (1)
4. How many samples will you collect? Explain briefly. (1)
5. All samples yielded α -lytic minute translucent colonies on Blood agar. Gram smear of the isolate is kept. What could be the causative bacteria? Can this be the causative agent? Why? (3)
6. How long will you give antibiotics to treat this patient? (1)

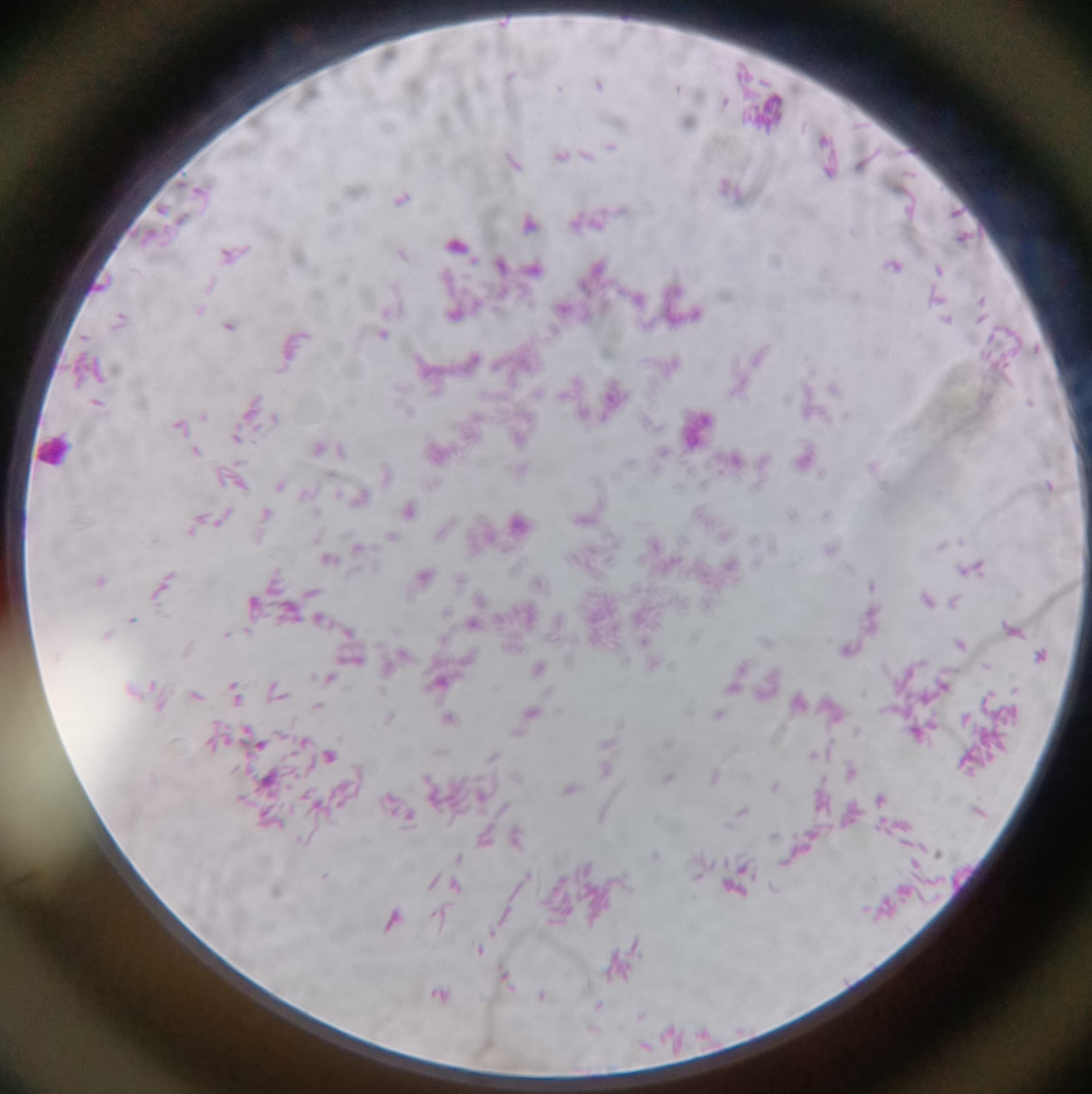
Streptococcus



Pseudomonas

B7. A 32 year old lady was brought to the casualty with 30% burns and she was admitted in the surgery ward. Few days later, she developed high fever and the burn sites were found to be infected.

1. What lab investigation is to be performed to find out the bacteria causing the infection? (2)
2. Briefly describe the method of collection of the sample? (2)
3. Name 2 bacteria commonly associated with infected burns. (2)
4. A Nutrient agar plate inoculated with the specimen after overnight incubation is kept. A gram smear from the isolate is also focused. What could be the bacteria? Why? (2)
5. Give 2 important factors contributing to the higher incidence of this bacteria in Hospital acquired infections. (2)



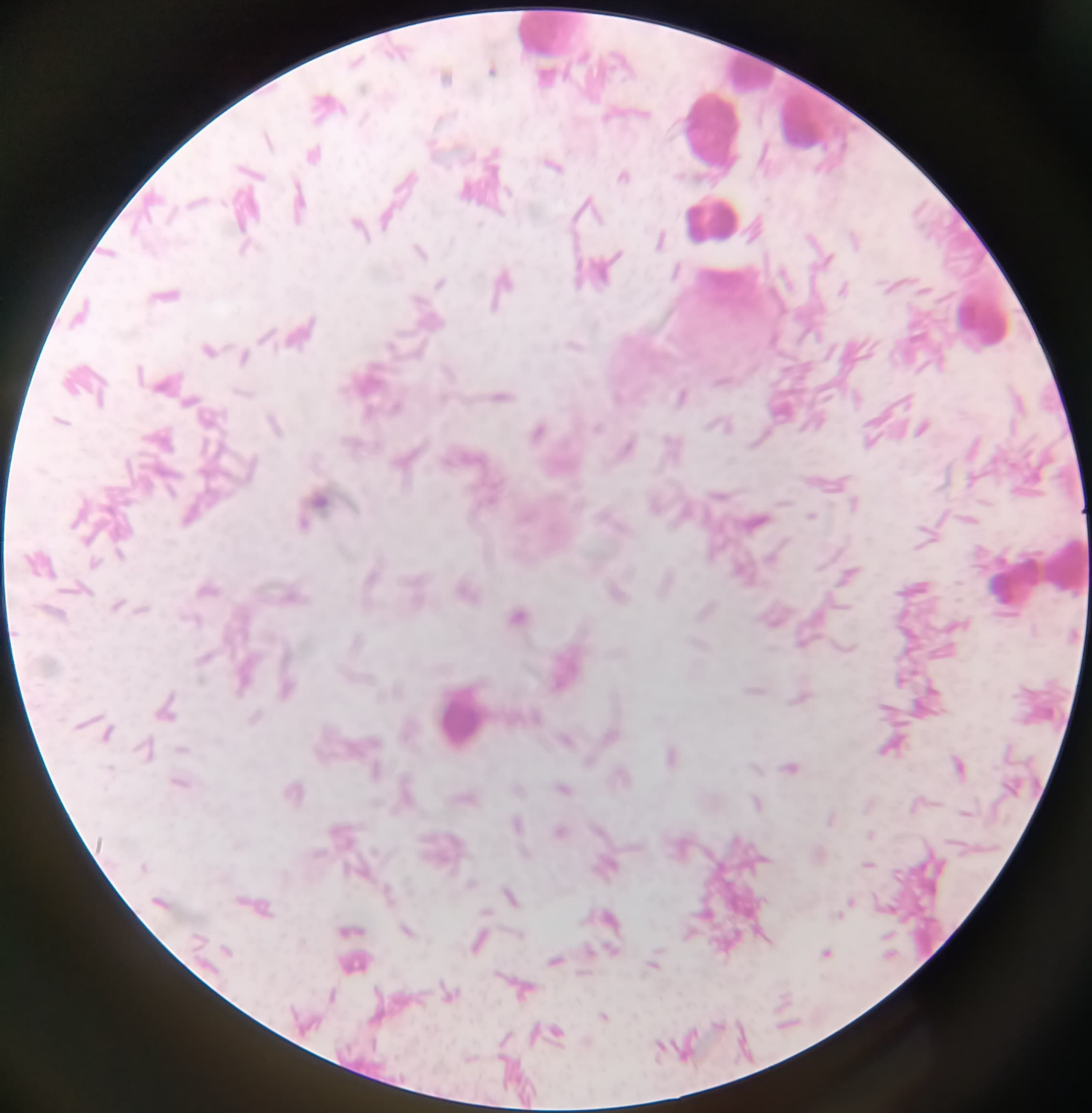




B8. A young woman came to the medical OPD with complaints of dysuria and increased frequency of micturition of 3 days duration. A provisional diagnosis of UTI was made.

1. Give one bacterial factor involved in the pathogenesis. (1/2)
2. Write one predisposing factor in this case. (1/2)
3. Name 2 bacteria which commonly cause UTI. (1)
4. Specify the nature of the specimen to be collected. (1)
5. Suggest one method for temporary storage of the specimen if there is any delay in its transport to the lab. (1)
6. Gram smear of the specimen is focused. A culture plate inoculated with the specimen is also kept. Write your observation. (2)
7. Name 4 bacteria commonly causing Hospital acquired UTI. (2)
8. Write 2 conditions where asymptomatic bacteriuria is clinically significant. (2)

E coli





Dengue Fever

V3. A 30 year old male presented to the hospital with abrupt onset fever, severe frontal headache and retro-orbital pain. On examination, temperature was 103° F and maculopapular rash was observed on the chest and upper limbs.

1. What is the provisional diagnosis? (1)
2. Name the causative agent. Which group of viruses does it belong to? (1)
3. How is it transmitted? (1)
4. Name the 3 clinical forms of this disease (1 ½)
5. Identify the spotter. What is it used for? (1)
6. Name the parameters which can be detected by this test to diagnose this condition (1 ½)
7. How will you differentiate between primary and secondary infection in this condition? (2)
8. Name 2 other viruses causing hemorrhagic fever (1)



AIDS

V₂

A 25 year old male with history of sexual contact with multiple partners is admitted with complaints of unexplained fever, progressive loss of weight, persistent diarrhoea and generalised lymphadenopathy for past 6 months.

1. What is your provisional diagnosis and the causative agent? (2)
2. Name 4 important modes of transmission? (2)
3. Name 2 high risk groups for this condition other than mentioned in this history (1)
4. Given is the tridot test done in this case
 - a) Which parameter is detected here? (1)
 - b) When will you consider the test invalid? (1)
 - 5) Which NACO strategic plan or algorithm has to be followed in this case?
When do ^{you} report as indeterminate? (2)
6. Which parasitic agent commonly causes persistent diarrhea in this condition? (1)

HIV TRI-DOT,
CONTROL

HIV-1

HIV-2

ID

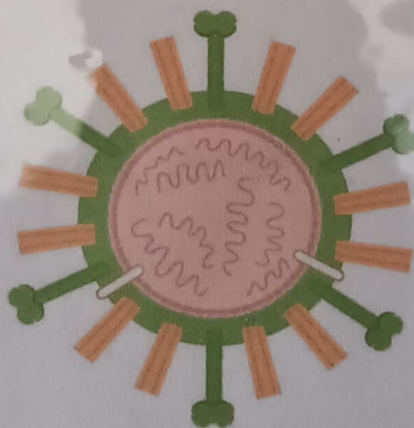
sample 2

V5. A 60 year old female came to the Medical OPD with complaints of high grade fever, chills, myalgia and dry cough.

Picture of the causative agent is displayed.

1. Identify the causative agent. (1)
2. Describe the structure. (3)
3. Name one important pulmonary and one extra-pulmonary complication. (2)
4. Name two specimens that can be collected for lab diagnosis. How will you transport it? (3)
5. What is the clinical significance of this microbial agent? (1)

Influenza Virus



Hepatitis B

V1.

40-year-old male presented with jaundice. He had a history of blood transfusion 3 months back

1. What is the most probable diagnosis? (1)
2. Identify the picture of causative agent displayed (1/2)
3. *How much amount of blood is infectious* for the above causative agent? (1/2)
4. What is the incubation period? (1/2)
5. Mention 2 other modes of transmission (1)
6. List 2 high risk groups prone to acquire this infection other than mentioned in the history of this patient (1)
7. Identify the spotter. What is it used for? (1)
8. Which is the first serological marker to be elevated? (1/2)
9. Which serological marker denote high infectivity? (1/2)
10. What type of vaccine is used in this condition? Mention the route and site of administration and the recommended schedule in adults? (3)
11. Which is the most common causative agent of this condition in developing countries? (1/2)

