



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A011

Microbiology Paper 1 [MICRO1]

Marks: 100

Duration: 180 mins.

M.C.Q: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

1			Which of the following is NOT a commensal in female genital tract?										(1)	
			1)	Lactobacillus species		2)	Streptococcus agalactiae		3)	Neisseria (non-sicca)		4)	Trichomonas vaginalis	
2			Which of the following items can generally be reprocessed by only using low-level disinfectant?										(1)	
			1)	Blood pressure cuffs		2)	Anaesthesia equipments		3)	Bronchoscopes		4)	Surgical instruments	
3			Thermometer are disinfected by										(1)	
			1)	Sodium hypochlorite		2)	Alcohol		3)	Phenol		4)	Peracetic acid	
4			Bacterial structure involved in respiration is										(1)	
			1)	Ribosome		2)	Pilli		3)	Mesosome		4)	Flagella	
5			Which of the following statement about active immunity is correct ?										(1)	
			1)	No lag phase		2)	Booster doses are useful		3)	Useful in immunodeficient people		4)	No memory cells	
6			A 10 year old girl is brought by her mother with complains of wheezing and itching since 2 weeks which is worsening. House hold has a new kitten that was brought home a month ago. The symptoms are suggestive of which type of hypersensitivity reaction?										(1)	
			1)	Type IV		2)	Type II		3)	Type I		4)	Type III	
7			A child has abnormal facial features with under developed chin, abnormal ears and an absent thymus on radiological examination. Blood studies showed hypocalcaemia. He has history of recurrent infections. Child is suffering from primary immunodeficiency due to										(1)	
			1)	DiGeorge syndrome		2)	X linked agammaglobinemia		3)	Common variable immunodeficiency		4)	Nezelof syndrome	
8			A young adult female is admitted to hospital with complaints of diarrhoea since last night. She gave history of passing rice watery stools. She also told there are few more cases with similar complaints from her locality. She is diagnosed to have cholera. The appearance of Vibrios in stained smear of mucous flakes from stool sample resembles										(1)	
			1)	Swams of gnats		2)	School of fish		3)	Fish in stream		4)	Thumb print	
9			In clinical stage 3 of HIV/AIDS according to WHO, patient will have										(1)	
			1)	Asymptomatic HIV		2)	Recurrent respiratory tract infection		3)	Oral candidiasis		4)	Kaposi's sarcoma	
10			A 35 year male from Shivamoga district complains of fever since 15 days. Kyasanur Forest Disease (KFD) diagnosis is made. KFD is transmitted by which of the following vector?										(1)	

1) Mosquito		2) Ticks		3) Mites		4) Sandfly	
-------------	--	----------	--	----------	--	------------	--

11		
----	--	--

Ekiri syndrome is produced by

1) Shigella sonnei		2) Escherichia coli		3) Salmonella typhi		4) Campylobacter jejuni	
--------------------	--	---------------------	--	---------------------	--	-------------------------	--

(1)

12		
----	--	--

Colicin typing is done for

1) Shigella sonnei		2) Shigella boydii		3) Shigella flexneri		4) Shigella dysenteriae	
--------------------	--	--------------------	--	----------------------	--	-------------------------	--

(1)

13		
----	--	--

Culture media used for diagnosis of EHEC 0157:H7 is

1) TCBS agar		2) Sorbitol Mac Conkey media		3) XLD agar		4) Deoxycholate media	
--------------	--	------------------------------	--	-------------	--	-----------------------	--

(1)

14		
----	--	--

Rotavirus vaccine is given by which route

1) Intramuscular		2) Intravenous		3) Oral		4) Subcutaneous	
------------------	--	----------------	--	---------	--	-----------------	--

(1)

15		
----	--	--

Which of the following promotes antimicrobial resistance?

1) Appropriate antimicrobial stewardship		2) Narrow-spectrum therapy when indicated		3) Unnecessary use of broad-spectrum antibiotics		4) Culture-directed therapy	
--	--	---	--	--	--	-----------------------------	--

(1)

16		
----	--	--

A patient with suspected bacterial meningitis is started on empirical broad-spectrum antibiotics. Blood culture and susceptibility results become available after 48 hours with identification of the suspected organism. What is the **most** appropriate stewardship principle?

1) Continue all empirical antibiotics		2) De-escalate to the narrowest effective antibiotic		3) Add another antibiotic		4) Stop all antimicrobial therapy	
---------------------------------------	--	--	--	---------------------------	--	-----------------------------------	--

(1)

17		
----	--	--

The **most** important principle of antimicrobial stewardship is

1) Use antibiotics for every fever		2) Use the right antimicrobial, dose, route and duration		3) Prefer broad-spectrum antibiotics in all infections		4) Continue antibiotics until symptoms completely disappear	
------------------------------------	--	--	--	--	--	---	--

(1)

18		
----	--	--

A hospitalized patient develops diarrhoea after receiving broad-spectrum antibiotics. Stool testing detects Clostridioides difficile toxin. Which intervention is **most** appropriate to prevent spread?

1) Droplet precautions only		2) Contact precautions and hand hygiene with soap and water		3) Airborne precautions		4) No isolation is required	
-----------------------------	--	---	--	-------------------------	--	-----------------------------	--

(1)

19		
----	--	--

An ICU patient develops pneumonia after 6 days of mechanical ventilation. The organism isolated is multidrug-resistant Acinetobacter baumannii. Which intervention is **most** important to prevent transmission to other patients?

1) Routine antifungal prophylaxis		2) Hand hygiene and appropriate contact precautions		3) Universal vaccination of ICU patients		4) Prolonged antibiotic therapy for all ICU patients	
-----------------------------------	--	---	--	--	--	--	--

(1)

20		
----	--	--

Which of the following is a device-associated healthcare-associated infection?

1) CAUTI		2) Hepatitis A		3) Measles		4) Food poisoning	
----------	--	----------------	--	------------	--	-------------------	--

(1)

LONG ESSAY QUESTIONS: 1 X 10 = 10

Answer all the questions.

21		
----	--	--

A 45 year old woman is posted for an elective surgical procedure. The operation theatre staff are preparing for the procedure. The surgery department post graduate is asked to select the appropriate

(10)

- method for sterilization and explain the working principle of autoclave.
- Define sterilization and disinfection.
 - Classify the methods of sterilization with examples.
 - Explain the working principle of an autoclave with a neat labelled diagram. (2+3+5)

SHORT ESSAY QUESTIONS: 11 X 5 = 55

Answer all the questions.

22			A 25 year old health care worker presents with jaundice, fatigue and loss of appetite. He reports a history of accidental needle stick injury 2 months ago. Viral hepatitis is suspected. - Describe the laboratory diagnosis of Hepatitis B infection. (5) - Briefly mention the vaccination available for prevention of viral Hepatitis. (3+2)
23			Classify dermatophytes. Enumerate the laboratory diagnosis for dermatophytosis. (2+3) (5)
24			An 8 year old malnourished child is brought by the mother with history of intense itching around the anus, especially at night. Small white threads like worms are noticed around the anal region. - Identify the parasite causing this condition. (5) - Describe the life cycle and laboratory diagnosis of this parasitic infection. (1+2+2)
25			Classify immunity. Write five differences between innate and acquired immunity. (1+4) (5)
26			A 30 year old man presents with profuse painless watery diarrhoea, vomiting and severe dehydration after consuming contaminated water. He is severely dehydrated and passes rice water stools. Based on the clinical presentation: - Identify the most likely causative organism and describe its pathogenesis. (5) - Describe the laboratory diagnosis of the suspected infection. (2+3)
27			A 26 year old pregnant woman at 28 weeks of gestation is found to be HIV positive during routine antenatal screening. She is asymptomatic and has no previous history of HIV testing. - What are the possible routes of mother-to-child transmission of HIV? (5) - What is the role of antiretroviral therapy in this patient? - How to diagnose HIV infection in the exposed newborn? (1+2+2)
28			In a health care centre, a receptionist gets a call that one of their regular patients is not feeling so well. The receptionist will inform it to the consultant nurse, who asks for more detailed history of the patient which the receptionist fails to provide because of her very brief and abrupt conversation with the patient. This annoys the nurse and later on, she gets busy with her routine work. As a result, no one attends that patient on that day. Suggest the strategies to improvise patient care in this scenario (5)
29			An adult female is suffering from dengue was investigated. NSI antigen and Dengue IgM were negative, Dengue IgG was positive. - Describe the structure of IgG with a neat labelled diagram. (5) - Discuss the functions of IgG. (2+3)
30			A 22 year old patient developed sudden difficulty in breathing, wheezing, facial swelling and a fall in blood pressure within minutes of receiving IV Penicillin injection. - Identify the type of hypersensitivity reaction (5) - Describe the mechanism of this hypersensitivity reaction. (1+4)
31			Describe Pathogenesis of bacillary dysentery. (5)
32			Classify culture media with examples for each. (5)

SHORT ANSWER QUESTIONS: 5 X 3 =15

Answer all the questions.

33			A bacterial isolate is found to be motile. Based on the arrangement of flagella, how to classify the bacteria? Give suitable examples. (3)
----	--	--	---

34			A bacterial culture shows different rates of multiplication during its growth. Justify the different phases of bacterial growth curve with the help of a neat labelled diagram.	(3)
35			A child presents with recurrent bacterial infections. Justify why a defect in humoral immunity is suspected. Give an example.	(3)
36			A recently exposed individual has symptoms suggestive of acute HIV infection but an antibody test is negative. Justify why the test may be negative. Mention one test useful in diagnosis in this case.	(3)
37			A person with fever and chills is suspected of having blood stream infection. Justify the need for collecting multiple blood culture samples.	(3)

-----End-----



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A012

Microbiology Paper 2 [MICRO2]

Marks: 100

Duration: 180 mins.

M.C.Q: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

1			All the following are colony descriptions of <i>Bacillus anthracis</i> EXCEPT	(1)				
<table border="1"> <tr> <td>1) Frosted glass</td> <td>2) Inverted fir tree</td> <td>3) String of pearls</td> <td>4) Bamboo stick</td> </tr> </table>					1) Frosted glass	2) Inverted fir tree	3) String of pearls	4) Bamboo stick
1) Frosted glass	2) Inverted fir tree	3) String of pearls	4) Bamboo stick					
2			Metachromatic granules are stained by all the following stains EXCEPT	(1)				
<table border="1"> <tr> <td>1) Neisser's stain</td> <td>2) Ziehl Neelsen stain</td> <td>3) Ponder's stain</td> <td>4) Albert's stain</td> </tr> </table>					1) Neisser's stain	2) Ziehl Neelsen stain	3) Ponder's stain	4) Albert's stain
1) Neisser's stain	2) Ziehl Neelsen stain	3) Ponder's stain	4) Albert's stain					
3			Which of the following is TRUE regarding <i>Trichomonas vaginalis</i>	(1)				
<table border="1"> <tr> <td>1) It is flagellated protozoan that lacks cyst stage in its life cycle</td> <td>2) It has 4 flagella at its anterior end and a single recurrent flagellum</td> <td>3) It shows characteristic twitching motility in saline mount preparation</td> <td>4) All of the above</td> </tr> </table>					1) It is flagellated protozoan that lacks cyst stage in its life cycle	2) It has 4 flagella at its anterior end and a single recurrent flagellum	3) It shows characteristic twitching motility in saline mount preparation	4) All of the above
1) It is flagellated protozoan that lacks cyst stage in its life cycle	2) It has 4 flagella at its anterior end and a single recurrent flagellum	3) It shows characteristic twitching motility in saline mount preparation	4) All of the above					
4			A 28-year old sexually active woman had frequent episodes of urinary tract infections. Which is the novobiocin resistant bacteria likely to be associated in this case?	(1)				
<table border="1"> <tr> <td>1) <i>Escherichia coli</i></td> <td>2) <i>Proteus vulgaris</i></td> <td>3) <i>Pseudomonas aeruginosa</i></td> <td>4) <i>Staphylococcus saprophyticus</i></td> </tr> </table>					1) <i>Escherichia coli</i>	2) <i>Proteus vulgaris</i>	3) <i>Pseudomonas aeruginosa</i>	4) <i>Staphylococcus saprophyticus</i>
1) <i>Escherichia coli</i>	2) <i>Proteus vulgaris</i>	3) <i>Pseudomonas aeruginosa</i>	4) <i>Staphylococcus saprophyticus</i>					
5			A 45-year-old farmer presented to with a history of multiple swellings on his foot and seropurulent pus discharge from the sinuses. KOH preparation from the discharge revealed the presence of dark, pigmented, fungal hyphae. Most likely agent is	(1)				
<table border="1"> <tr> <td>1) <i>Actinomyces madurai</i></td> <td>2) <i>Streptomyces</i></td> <td>3) <i>Madurella mycetomatis</i></td> <td>4) <i>Nocardia</i></td> </tr> </table>					1) <i>Actinomyces madurai</i>	2) <i>Streptomyces</i>	3) <i>Madurella mycetomatis</i>	4) <i>Nocardia</i>
1) <i>Actinomyces madurai</i>	2) <i>Streptomyces</i>	3) <i>Madurella mycetomatis</i>	4) <i>Nocardia</i>					
6			White piedra is caused by	(1)				
<table border="1"> <tr> <td>1) <i>Piedraia hortae</i></td> <td>2) <i>Trichosporon beigeli</i></td> <td>3) <i>Trichophyton verrucosum</i></td> <td>4) <i>Microsporum gypseum</i></td> </tr> </table>					1) <i>Piedraia hortae</i>	2) <i>Trichosporon beigeli</i>	3) <i>Trichophyton verrucosum</i>	4) <i>Microsporum gypseum</i>
1) <i>Piedraia hortae</i>	2) <i>Trichosporon beigeli</i>	3) <i>Trichophyton verrucosum</i>	4) <i>Microsporum gypseum</i>					
7			In what condition the HIV patients are treated with trimethoprim-sulphamethoxazole prophylaxis in order to prevent toxoplasmosis?	(1)				
<table border="1"> <tr> <td>1) In all patients</td> <td>2) In case of CD4 below 100/μL</td> <td>3) In case of CD4 below 500/μL</td> <td>4) In cases where IgG is high</td> </tr> </table>					1) In all patients	2) In case of CD4 below 100/ μ L	3) In case of CD4 below 500/ μ L	4) In cases where IgG is high
1) In all patients	2) In case of CD4 below 100/ μ L	3) In case of CD4 below 500/ μ L	4) In cases where IgG is high					
8			Cervical cancer is caused by	(1)				
<table border="1"> <tr> <td>1) HPV type 1-4</td> <td>2) HPV type 5-9</td> <td>3) HPV type 16-18</td> <td>4) Herpes simplex virus-2</td> </tr> </table>					1) HPV type 1-4	2) HPV type 5-9	3) HPV type 16-18	4) Herpes simplex virus-2
1) HPV type 1-4	2) HPV type 5-9	3) HPV type 16-18	4) Herpes simplex virus-2					
9			The cardiolipin antigen of <i>Treponema pallidum</i> is	(1)				
<table border="1"> <tr> <td>1) Specific antigen</td> <td>2) Non-specific antigen</td> <td>3) An extract from non-pathogenic <i>Treponemes</i></td> <td>4) Used in TPHA test</td> </tr> </table>					1) Specific antigen	2) Non-specific antigen	3) An extract from non-pathogenic <i>Treponemes</i>	4) Used in TPHA test
1) Specific antigen	2) Non-specific antigen	3) An extract from non-pathogenic <i>Treponemes</i>	4) Used in TPHA test					
10			The most commonly used method for the isolation of <i>Chlamydia</i> is	(1)				
<table border="1"> <tr> <td>1) Culture on</td> <td>2) Culture on vero</td> <td>3) Inoculation into</td> <td>4) Culture on</td> </tr> </table>					1) Culture on	2) Culture on vero	3) Inoculation into	4) Culture on
1) Culture on	2) Culture on vero	3) Inoculation into	4) Culture on					

11. A 30-year-old female patient presents with complaints of a worm extruding from her left lower extremity. Initially, it was a blister before the worm popped out from it. Which of the parasite is **most** likely to be coming out of the blister? (1)

1)	Dracunculus medinensis	2)	Necator americanus	3)	Strongyloides stercoralis	4)	Ancylostoma duodenale
----	------------------------	----	--------------------	----	---------------------------	----	-----------------------

12. The reservoir of infection of Psittacosis is (1)

1)	Human carriers	2)	Infected pet birds	3)	Infected pet dogs	4)	Infected rodents
----	----------------	----	--------------------	----	-------------------	----	------------------

13. All of the following are the examples of bacterial zoonotic diseases **EXCEPT** (1)

1)	Kyasnur forest disease	2)	Plague	3)	Anthrax	4)	Brucellosis
----	------------------------	----	--------	----	---------	----	-------------

14. A 68 year old female, presented with chronic watery diarrhoea. She was seropositive for HIV, her stool microscopy showed acid fast oocysts measuring 5 micron in diameter. What is the likely etiological agent? (1)

1)	Cryptosporidium parvum	2)	Isospora belli	3)	Entamoeba histolytica	4)	Balantidium coli
----	------------------------	----	----------------	----	-----------------------	----	------------------

15. Antigenic shift seen in Orthomyxoviridae is (1)

1)	An abrupt change in gene	2)	A gradual change	3)	Responsible for endemicity of infection	4)	A phenotypic change
----	--------------------------	----	------------------	----	---	----	---------------------

16. A 55- year old diabetic man recovered after suffering from COVID 19 and was discharged from the ICU. Three weeks later he developed fever, nausea, with tenderness and swelling of the eyelids. A diagnosis of rhino-orbito-cerebral mucormycosis was made. The KOH mount showed ribbon like wide aseptate hyphae. The **most** probable fungus is (1)

1)	Aspergillus	2)	Mucor	3)	Penicillium	4)	Candida species
----	-------------	----	-------	----	-------------	----	-----------------

17. The vector responsible for the transmission of African sleeping sickness is (1)

1)	Tse tse fly	2)	Culex mosquito	3)	Aedes mosquito	4)	Rat flea
----	-------------	----	----------------	----	----------------	----	----------

18. A gardener developed nodular lesions on his hand which gradually turned into ulcers. Histopathological examination of the necrotic tissue showed asteroid bodies and microscopic examination of the culture showed pear-shaped conidia in rosette-like clusters. What is the diagnosis? (1)

1)	Blastomycosis	2)	Lobomycosis	3)	Sporotrichosis	4)	Histoplasmosis
----	---------------	----	-------------	----	----------------	----	----------------

19. All the following are **TRUE** with regards to the treatment of an animal bite wound **EXCEPT** (1)

1)	Wash the wound thoroughly with soap and water	2)	Treat with spirit / tincture iodine	3)	Infiltrate with anti-rabies serum	4)	Suture the wound immediately
----	---	----	-------------------------------------	----	-----------------------------------	----	------------------------------

20. Which of the following is **true** regarding the treatment of CNS infections caused by free-living amoeba? (1)

1)	It can be treated successfully with metronidazole	2)	The surgical treatment is often successful	3)	The condition is almost fatal	4)	All of the above
----	---	----	--	----	-------------------------------	----	------------------

Answer all the questions.

21		
----	--	--

A child aged 7 year with high grade fever, toxic, pain in the throat and inability to swallow was brought to the casualty. On examination, a white patch was found on the fauces, which started bleeding when touched. History of immunization was not available. (1+1+5+3)

- What is the clinical diagnosis?
- Name the etiological agent causing this clinical condition?
- Write in detail pathogenesis and laboratory diagnosis of this condition.
- Discuss the management of this condition.

SHORT ESSAY QUESTIONS: 11 X 5 = 55**Answer all the questions.**

22			Discuss the differences between Lepromatous Leprosy and Tuberculoid Leprosy.	(5)
23			A 7 year old presented with severe sore throat, fever, with difficulty in swallowing. On examination she had bilateral tender submandibular lymphadenopathy. A swab culture was sent, which showed Gram positive cocci in short chains. The diagnosis was confirmed as Streptococcal pharyngitis. (2+3) a) Discuss the pathogenesis of this Streptococcal infections. b) Describe the Non-suppurative sequelae of this infection.	(5)
24			Describe the pathogenesis and laboratory diagnosis of Influenza virus infection. Explain how antigenic shift and drift affects its pathogenicity. (3+2)	(5)
25			A middle aged man presented to the hospital with chronic diarrhoea, fever and weight loss. He was a known HIV seropositive case. His stool examination showed parasitic oocysts measuring 5 micron. a) What is the most likely clinical diagnosis? b) Discuss the laboratory diagnosis and treatment of this condition. (1+4)	(5)
26			Discuss the pathogenesis and laboratory diagnosis of Gonorrhoea.	(5)
27			A 3-year-old child developed fever, cough, coryza and conjunctivitis followed by the appearance of a maculopapular rash behind the ears which progressed all over the body. On examination, small bluish white spot surrounded by erythema was found in the buccal mucosa and on inquiry mother gave history of incomplete vaccination. a) What is the probable diagnosis? b) Discuss in detail the laboratory diagnosis of this condition and add a note on its prevention. (1+4)	(5)
28			A five-year-old boy who was bitten by a rabid dog and presented to the emergency department with multiple scratches on the upper arms and neck. His parents stated that the dog was a stray that lived in their locality. Wound toilet was performed, followed by the application of povidone-iodine. The wound was left open. The boy was given tetanus toxoid and a Vero cell culture vaccine was started. He completed the course. The dog died two days later. Its brain was sent to the veterinary laboratory and tested positive for Negri bodies on histopathology. a) What are Negri bodies and what is its significance? b) How can rabies be prevented in human beings? (2+3)	(5)
29			Discuss the pathogenesis and laboratory diagnosis of Primary Amoebic Meningoencephalitis. (3+2)	(5)
30			Enumerate the pathogens causing urinary tract infections. Discuss the laboratory diagnosis of Escherichia coli UTI with a note on significant bacteriuria. (1+4)	(5)
31			A 38 year old shepherd complains of painless black sore on his hand. The sore started few days back with itchy bump which now turned to black scab. He gives a history of handling a sick sheep few days back. The pus collected was sent to microbiological test, which revealed bamboo shaped gram positive bacilli. a) What is the most probable clinical condition? b) Discuss the laboratory diagnosis of this condition. (1+4)	(5)
32			A 50 year old daily wage worker is admitted to the ICU with severe breathing difficulty. His elder daughter was standing outside ICU, without informing about her father condition. She kept asking the nurse staff but no-one attended her. a) As a duty doctor, how to handle this situation? b) How does sympathy and empathy play role in handling this situation? (2+3)	(5)

SHORT ANSWER QUESTIONS: 5 X 3 =15**Answer all the questions.**

33			Mention the importance of CD4 count and its significance in HIV and opportunistic infections.	(3)
34			Why is an environmental site contaminated with Bacillus anthracis (anthrax) considered dangerous to humans for decades, even after the active bacteria have died off?	(3)
35			During which phase of Pertussis, is the infected individual most infectious and why?	(3)
36			Which parasites causes cutaneous larva migrans and why?	(3)
37			In which ways are Mycoplasma similar to and different from viruses?	(3)

-----End-----



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A009

Pathology Paper 1 [PATHO1]**Marks: 100**

Duration: 180 mins.

M.C.O: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

1			AL type of amyloid is seen in								(1)
			1) Chronic pyelonephritis		2) Multiple myeloma		3) Familial amyloidosis		4) Rheumatoid arthritis		
2			Carcinomas metastasize most commonly due to spread via								(1)
			1) Transcoelomic pathway		2) Haematogenous route		3) Lymphatic route		4) Retrograde		
3			A 55-year-old man died because of myocardial infarction after experiencing severe chest pain. In autopsy of heart, which type of necrosis is found?								(1)
			1) Caseous necrosis		2) Liquefactive necrosis		3) Coagulative necrosis		4) Apoptotic necrosis		
4			Release of lipopolysaccharides in the body leads to								(1)
			1) Cardiogenic shock		2) Septic shock		3) Hypovolemic shock		4) Neurogenic shock		
5			In Filariasis, cause of edema is								(1)
			1) Impaired lymphatic drainage		2) Malnutrition		3) Sodium retention		4) Venous obstruction		
6			A 16-year-old boy presents to the clinic with tall stature, gynecomastia and reduced testicular volume. What is the most likely karyotype diagnosis for this patient?								(1)
			1) 46, XY		2) 47, XXY		3) 45, XO		4) 46, XX		
7			Intracellular calcification begins at								(1)
			1) Golgi bodies		2) Mitochondria		3) Endoplasmic reticulum		4) Intracellular vacuole		
8			Typical microscopic feature seen in chronic congestive splenomegaly is								(1)
			1) Focal Necrosis		2) Siderotic nodules		3) Atrophy		4) Hyperplasia of white pulp		
9			The most important indicator of malignancy is								(1)
			1) Increased mitotic activity		2) Infiltrative borders		3) Metastasis		4) Necrosis		
10			A 68 year old man presented with history of back pain and weakness. X-Ray showed punched out lytic lesions in the bones of the vertebral column. He is probably suffering from								(1)
			1) Iron deficiency anaemia		2) Leukaemia		3) Multiple myeloma		4) Thalassemia		
11			Gastric B cell lymphomas are related to								(1)

	1) Chromosomal translocation		2) Genetic mutation		3) H. pylori infection		4) Dietary deficiency	
12			Ketone bodies are excreted in urine during					
	1) Low lipid intake		2) Low protein intake		3) Low vitamin intake		4) Low carbohydrate intake	(1)
13			A 30-year-old patient has an unknown blood type and requires an urgent transfusion. Which blood type should be given to ensure compatibility?					
	1) A positive		2) B positive		3) AB positive		4) O negative	(1)
14			A 30-year-old patient recovers from a superficial skin burn. Few months later, the patient notices that the skin around the burn site is thickened and hyperpigmented. This complication is known as					
	1) Hyperplasia		2) Hypertrophy		3) Keloid formation		4) Atrophy	(1)
15			A 30-year-old man with a history of chronic fatigue and unintentional weight loss undergoes a complete blood count showing elevated white blood cells and a predominance of atypical large cells which are positive for Terminal Deoxynucleotidyl Transferase and Periodic Acid-Schiff. What is the most likely diagnosis?					
	1) Acute Lymphoblastic Leukaemia		2) Acute Myeloid Leukaemia		3) Chronic Lymphocytic Leukaemia		4) Chronic Myeloid Leukaemia	(1)
16			Malaria affects all the organs EXCEPT					
	1) Liver		2) Brain		3) Heart		4) Spleen	(1)
17			A new-born presents with jaundice shortly after birth. Which blood-related condition should be investigated?					
	1) Rh incompatibility		2) Iron deficiency anaemia		3) Sickle cell disease		4) Haemophilia	(1)
18			Heavy proteinuria is characterised by loss of protein					
	1) > 3 g/ day		2) > 2 g/ day		3) > 1g/ day		4) > 0.5 g/ day	(1)
19			A patient presents with abdominal pain and fever for 2 days. His blood count shows elevated leucocytes. Which is the primary cell type involved in this phase of inflammation?					
	1) Plasma cells		2) Lymphocytes		3) Neutrophils		4) Monocytes	(1)
20			A patient's genetic testing reveals a change in the DNA sequence that results in a premature stop codon in a protein-coding gene. Which type of mutation is this?					
	1) Missense mutation		2) Nonsense mutation		3) Silent mutation		4) Frameshift mutation	(1)

LONG ESSAY QUESTIONS: 1 X 10 = 10

Answer all the questions.

21			A 37 year male presented with cough with expectoration, evening rise of temperature, loss of appetite and weight. What is the diagnosis of this case? Discuss the etiopathogenesis of the above condition. Describe the gross and microscopic findings in the affected organ. (1+5+4)	(10)
----	--	--	---	------

SHORT ESSAY QUESTIONS: 11 X 5 = 55

Answer all the questions.

22			Discuss the process of phagocytosis.	(5)
23			A 22 year old female presents with joint pain predominantly involving smaller joints. On examination- Pallor present, erythematous rash over the face involving the nasal bridge is apparent. Identify the clinical	(5)

condition. Describe the laboratory features of the above condition. (1+4)

24			Describe the gross and microscopy of chronic venous congestion of spleen. (2+3)	(5)
25			Discuss the etiology and clinical features of Down syndrome. (1+4)	(5)
26			Describe the Knudson's Two - Hit hypothesis in Retinoblastoma with a neat labelled diagram. Enumerate the types of rosettes seen in the above condition. (4+1)	(5)
27			A 15 year old male presented with easy bruising and massive hemorrhage following trauma. Patient gives history of similar complaints in the past with positive family history. What is the clinical diagnosis? What is the mode of inheritance of this disease? List the investigations for above condition? (1+1+3)	(5)
28			An 8 year old male child presented with the history of fever, headache and projectile vomiting. Cerebrospinal fluid showed total count of 2500 cells /cubic mm with predominant neutrophils. a) What is the diagnosis of this case? b) What are the other cerebrospinal fluid findings in this patient? c) What are the causative organisms for the above condition? (1+2+2)	(5)
29			Explain the stages of fracture healing with a neat labelled diagram.	(5)
30			An ICU staff nurse notices a sharp drop in a post-operative patient's urine output and a rising trend in heart rate. The nurse informs verbally to the on-duty resident who is overwhelmed with other patients work-up. The patient develops severe acute kidney injury due to unaddressed internal bleeding. Enumerate all the health care team members that are involved in the above patient care. Discuss the role played by each health care team member to avoid occurrence of such complications. (2+3)	(5)
31			A 30 year old female, mother of 5 children, the youngest being one year old, now presents with weakness. On examination - pallor and koilonychia present. What is the diagnosis? Mention causes of the above condition. Describe peripheral smear picture with a neat labelled diagram. (1+1+3)	(5)
32			Define Neoplasia. Discuss the role of oncogenes in neoplasia. (1+4)	(5)

SHORT ANSWER QUESTIONS: 5 X 3 =15

Answer all the questions.

33			Enumerate two examples of pathological apoptosis. Reason out why apoptosis does not trigger an inflammatory response unlike necrosis?	(3)
34			Why is the Lepromin skin test strongly positive in Tuberculoid Leprosy but completely negative in Lepromatous Leprosy? List additional any two difference between Tuberculoid and Lepromatous Leprosy	(3)
35			List causes of haematuria that are associated with dysmorphic RBCs and RBC casts. Justify the reason for its occurrence (1+2)	(3)
36			Classify Hodgkin's lymphoma. Why is it considered a unique neoplasm when evaluating its cellular composition under a microscope. (2+1)	(3)
37			Why lavender cap vacutainer tube is a gold standard for complete blood counts, but completely contraindicated for electrolyte profile measuring Potassium and Calcium?	(3)

-----End-----



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A010

Pathology Paper 2 [PATHO2]

Marks: 100

Duration: 180 mins.

M.C.Q: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

- 1 Disarrangement of myofibrils is found in which of the following type of cardiomyopathy? (1)
- 1) Dilated 2) Constrictive 3) Fibroelastic 4) Hypertrophic
- 2 A 52 year old male presented with fever, malaise and cough with expectoration since 4 days with rusty sputum production. Chest X-ray showed right lower lobe consolidation. What is the diagnosis? (1)
- 1) Bronchiectasis 2) Lobar pneumonia 3) Chronic bronchitis 4) Emphysema
- 3 A 26-year-old woman has noticed a lump in her right breast for the past year. A 2-cm, firm, circumscribed, movable mass is palpated in the lower outer quadrant. Excision of the specimen revealed a capsulated tumour and the cut section showed slit like spaces. Which of the following is the **most** likely diagnosis? (1)
- 1) Fibrocystic Disease 2) Fibroadenoma 3) Intraductal Papilloma 4) Lobular carcinoma
- 4 A 28 year old woman underwent colonoscopy and biopsy shows villous adenoma with dysplasia. Her father had died of colon cancer at age 45. She is **most** likely to have mutations in which gene? (1)
- 1) p53 2) RB 3) HNPCC 4) APC
- 5 Which of the following tumour marker is useful in the diagnosis of the ovarian carcinoma? (1)
- 1) CEA 2) AFP 3) CA-125 4) CA-15-3
- 6 A 58-year-old male with a history of hypertension and hyperlipidemia presents with sudden onset of severe chest pain radiating to his left arm. Electrocardiogram shows ST-elevation and troponin levels are elevated. What is the **most** likely underlying pathology leading to this presentation? (1)
- 1) Hypertensive cardiomyopathy 2) Coronary artery atherosclerosis with thrombus formation 3) Aortic dissection 4) Mitral valve prolapse
- 7 Curschmann's spirals are seen in which of the following obstructive lung diseases? (1)
- 1) Emphysema 2) Chronic Bronchitis 3) Bronchial asthma 4) Bronchiectasis
- 8 Carrier state is seen in all types of Hepatitis **EXCEPT** (1)
- 1) Hepatitis A 2) Hepatitis B 3) Hepatitis C 4) Hepatitis D
- 9 A 45 year old female was found to have bilateral ovarian masses and she underwent abdominal hysterectomy. On examination both the ovaries were symmetrically enlarged with smooth outer surface. Microscopic examination revealed Signet ring cells. What is the **most** likely diagnosis? (1)
- 1) Dysgerminoma 2) Krukenberg tumour 3) Serous Cystadenocarcinoma 4) Thecoma
- 10 Which of the following intraocular tumour is an example of malignant small round cell tumour? (1)

- 11 Which of the following histochemical stain is used to grossly identify the infarct within 2-3 hours after onset? (1)
- 1) Retinoblastoma 2) Melanoma 3) Rhabdomyoma 4) Haemangioma
- 12 Creeping fat or mesenteric fat wrapped around the bowel surface is found in (1)
- 1) Triphenyl tetrazolium chloride 2) Masson trichrome 3) Giemsa 4) Reticulin
- 13 Caplan's syndrome may develop in the following type of pneumoconiosis EXCEPT (1)
- 1) Crohn's Disease 2) Ulcerative colitis 3) Pseudomembranous colitis 4) Irritable bowel syndrome
- 14 A 50-year-old woman reports recurrent right upper abdominal pain, nausea and bloating over the past year, with symptoms worsening after consuming fatty foods. Ultrasound shows a thickened gallbladder wall and gallstones. All of the following microscopic findings are seen in this case EXCEPT (1)
- 1) Lymphocytic infiltration 2) Neutrophilic infiltration and mucosal ulceration 3) Rokitansky - Ashcroft sinuses 4) Fibrosis
- 15 Which of the following is the **most** appropriate immunohistochemical marker for Gastrointestinal Stromal Tumour (GIST)? (1)
- 1) CD117 2) CD 34 3) CK 4) Vimentin
- 16 Pseudomyxoma peritonei is a complication of which ovarian tumour? (1)
- 1) Mucinous tumours 2) Serous tumours 3) Brenner tumour 4) Dysgerminoma
- 17 Squamous cell carcinoma of skin arising from chronic ulcer is called as (1)
- 1) Rodent ulcer 2) Venous ulcer 3) Marjolin's ulcer 4) Buruli ulcer
- 18 Which one of the following is **NOT** included as major criteria in Revised Jones criteria? (1)
- 1) Arthritis 2) Elevated ESR 3) Pancarditis 4) Subcutaneous nodules
- 19 Squamous cell carcinoma of cervix is associated with which of the following virus? (1)
- 1) HPV 6, 11 2) HPV 16, 18 3) HPV 17, 19 4) HPV 20, 22
- 20 Which among the following is a Rheumatoid arthritis autoantibody? (1)
- 1) Anti Jo 1 2) Anti CCP 3) Anti ds DNA 4) Anti histone

LONG ESSAY QUESTIONS: 1 X 10 = 10

Answer all the questions.

- 21 A 48 year old female complains of intermittent spotting per vagina. Per speculum examination shows cauliflower growth. Pap smear shows atypical cells. (10)
- a) What is the probable diagnosis?
- b) Discuss the etiopathogenesis of the given condition
- c) Describe gross and microscopy of this lesion. (1+4+5)

SHORT ESSAY QUESTIONS: 11 X 5 = 55

Answer all the questions.

- 22 A 24-year-old male presents with recurrent abdominal pain, chronic diarrhoea and weight loss. Colonoscopy reveals skip lesions with cobblestone appearance involving the terminal ileum. What is the most likely diagnosis? Describe the gross and microscopic features of this condition. (1+4) (5)

23			Enumerate hepatotropic viruses. Describe serologic diagnosis of Hepatitis B infection. (2+3)	(5)
24			A 16-year-old boy presents with progressive pain and swelling around the knee. X-ray shows a destructive metaphyseal lesion of the distal femur with a sunburst appearance and Codman triangle. What is the most likely diagnosis? Describe the gross and microscopic features of the given condition. (1+2+2)	(5)
25			Describe the gross and microscopic changes in Rheumatic Heart Disease with a neat labelled diagram. (2+3)	(5)
26			Classify tumours of Ovary with a neat schematic representation. (2+3)	(5)
27			A 6-year-old child presents with generalized oedema and heavy proteinuria with no hypertension and normal renal function. What is the most likely diagnosis? Describe the characteristic light microscopic, immunofluorescence and electron microscopic findings in this condition. (1+4)	(5)
28			A 60 year old female complains of lump in left breast since 6 months. On examination the nipple was retracted, mass was hard in consistency and fixed to underlying structures. What is the probable diagnosis? Describe the molecular classification of the above disease. Enumerate four prognostic factors. (1+2+2)	(5)
29			Compare and contrast the characteristic CSF findings in acute pyogenic, tubercular and viral meningitis.	(5)
30			Describe the gross and microscopic findings in atherosclerosis. (2+3)	(5)
31			A 25-year-old male presents with evening rise of temperature, productive cough, loss of appetite and weight loss; chest X-ray shows multiple coalescent opacities in the right upper lobe. What is the most likely diagnosis? Draw a neat labelled diagram of microscopic features of the above condition. Enumerate the investigations used to confirm the diagnosis. (1+2+2)	(5)
32			What is informed consent? Describe in detail the contents of an informed consent in surgical procedures and research. (1+2+2)	(5)

SHORT ANSWER QUESTIONS: 5 X 3 =15

Answer all the questions.

33			How chronic UV radiation exposure predisposes to squamous cell carcinoma of skin?	(3)
34			How chronic alcoholic consumption causes cirrhosis? Justify	(3)
35			Justify why urinary supersaturation is essential for the formation of renal calculi.	(3)
36			Justify how prolonged unopposed oestrogen exposure increases the risk of endometrioid carcinoma.	(3)
37			Advanced glycation end-products (AGEs) contribute to chronic diabetic complications. Justify	(3)

-----End-----

Def
No correction.
9/9/2026



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A007

Pharmacology Paper 1 [PHARM1]

Marks: 100

Duration: 180 mins.

M.C.Q: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

1			The drug that is infused intravenously in the treatment of acute congestive glaucoma is	(1)				
<table border="1"> <tr> <td>1) Apraclonidine</td> <td>2) Dorzolamide</td> <td>3) Latanoprost</td> <td>4) Mannitol</td> </tr> </table>					1) Apraclonidine	2) Dorzolamide	3) Latanoprost	4) Mannitol
1) Apraclonidine	2) Dorzolamide	3) Latanoprost	4) Mannitol					
2			The antidotal action of Sodium Nitrite in Cyanide poisoning is based on	(1)				
<table border="1"> <tr> <td>1) Physical antagonism</td> <td>2) Chemical antagonism</td> <td>3) Physiological antagonism</td> <td>4) Non-competitive antagonism</td> </tr> </table>					1) Physical antagonism	2) Chemical antagonism	3) Physiological antagonism	4) Non-competitive antagonism
1) Physical antagonism	2) Chemical antagonism	3) Physiological antagonism	4) Non-competitive antagonism					
3			Second gas effect is exerted by which of the following gas when co-administered with Halothane	(1)				
<table border="1"> <tr> <td>1) Nitrous oxide</td> <td>2) Cyclopropane</td> <td>3) Nitrogen</td> <td>4) Helium</td> </tr> </table>					1) Nitrous oxide	2) Cyclopropane	3) Nitrogen	4) Helium
1) Nitrous oxide	2) Cyclopropane	3) Nitrogen	4) Helium					
4			A 30-year-old woman plans to go on a cruise and is concerned about experiencing motion sickness. She asks her doctor for advice on preventing symptoms such as nausea and vomiting during the trip. Which of the following anticholinergic drugs is most commonly recommended for preventing motion sickness?	(1)				
<table border="1"> <tr> <td>1) Scopolamine</td> <td>2) Oxybutynin</td> <td>3) Benztropine</td> <td>4) Glycopyrrolate</td> </tr> </table>					1) Scopolamine	2) Oxybutynin	3) Benztropine	4) Glycopyrrolate
1) Scopolamine	2) Oxybutynin	3) Benztropine	4) Glycopyrrolate					
5			An alcoholic male with hepatic cirrhosis complains of ascites and edema. Which diuretic should be prescribed in this patient?	(1)				
<table border="1"> <tr> <td>1) Spironolactone</td> <td>2) Hydrochlorothiazide</td> <td>3) Furosemide</td> <td>4) Acetazolamide</td> </tr> </table>					1) Spironolactone	2) Hydrochlorothiazide	3) Furosemide	4) Acetazolamide
1) Spironolactone	2) Hydrochlorothiazide	3) Furosemide	4) Acetazolamide					
6			Actions of Morphine include all EXCEPT	(1)				
<table border="1"> <tr> <td>1) Vagal stimulation</td> <td>2) Miosis</td> <td>3) Antiemetic</td> <td>4) Postural hypotension</td> </tr> </table>					1) Vagal stimulation	2) Miosis	3) Antiemetic	4) Postural hypotension
1) Vagal stimulation	2) Miosis	3) Antiemetic	4) Postural hypotension					
7			Bioavailability of drug refers to	(1)				
<table border="1"> <tr> <td>1) Percentage of administered dose that reaches systemic circulation in the unchanged form</td> <td>2) Ratio of oral to parenteral dose</td> <td>3) Ratio of orally administered drug to that excreted in the faeces</td> <td>4) Ratio of drug excreted unchanged in urine to that excreted as metabolites</td> </tr> </table>					1) Percentage of administered dose that reaches systemic circulation in the unchanged form	2) Ratio of oral to parenteral dose	3) Ratio of orally administered drug to that excreted in the faeces	4) Ratio of drug excreted unchanged in urine to that excreted as metabolites
1) Percentage of administered dose that reaches systemic circulation in the unchanged form	2) Ratio of oral to parenteral dose	3) Ratio of orally administered drug to that excreted in the faeces	4) Ratio of drug excreted unchanged in urine to that excreted as metabolites					
8			A 65-year-old male with a history of myocardial infarction (MI) is admitted to the hospital. He has moderate left ventricular dysfunction and his blood pressure is slightly elevated. The cardiologist decides to start him on a beta-blocker to reduce his heart rate and myocardial oxygen demand. Which of the following anti-adrenergic agents would be the most appropriate for this patient's post-MI management?	(1)				
<table border="1"> <tr> <td>1) Metoprolol</td> <td>2) Prazosin</td> <td>3) Clonidine</td> <td>4) Phentolamine</td> </tr> </table>					1) Metoprolol	2) Prazosin	3) Clonidine	4) Phentolamine
1) Metoprolol	2) Prazosin	3) Clonidine	4) Phentolamine					
9			Which of the following is the drug of choice in Diabetes Insipidus?	(1)				
<table border="1"> <tr> <td>1) Thioguanine</td> <td>2) Thiacetazone</td> <td>3) Thioridazone</td> <td>4) Thiazide</td> </tr> </table>					1) Thioguanine	2) Thiacetazone	3) Thioridazone	4) Thiazide
1) Thioguanine	2) Thiacetazone	3) Thioridazone	4) Thiazide					
10			Adrenaline added to local anaesthetic solution for infiltration anaesthesia affords the following EXCEPT	(1)				
<table border="1"> <tr> <td>1) Provides a more</td> <td>2) Prolongs the</td> <td>3) Makes the</td> <td>4) Reduces systemic</td> </tr> </table>					1) Provides a more	2) Prolongs the	3) Makes the	4) Reduces systemic
1) Provides a more	2) Prolongs the	3) Makes the	4) Reduces systemic					

11 Diazepam is used in treatment of all the following conditions **EXCEPT**

1) Anxiety	2) Schizophrenia	3) Insomnia	4) Febrile convulsions
------------	------------------	-------------	------------------------

13			Rebound hypertension on sudden stoppage of medication is most likely to occur with								(1)
1)	Hydrochlorothiazide		2)	Prazosin		3)	Clonidine		4)	Lisinopril	

15 Which of the following is an antidote for Streptokinase overdose?

1) Vitamin K 2) Aspirin 3) Epsilon aminocaproic acid 4) Alteplase

17 Which of the following hypolipidemic drugs is **most** effective in raising HDL-cholesterol level and lowers serum triglycerides

(1)

1)	Nicotinic acid	2)	Fenofibrate	3)	Cholestyramine	4)	Pravastatin
----	----------------	----	-------------	----	----------------	----	-------------

19 Which of the following is a serotonin and norepinephrine reuptake inhibitor (SNRI)?

1) Mianserin 2) Venlafaxine 3) Bupropion 4) Citalopram

LONG ESSAY QUESTIONS: 1 X 10 = 10

21		
----	--	--

A 20-year-old boy is brought to the psychiatry OPD. He complains of constantly hearing voices for six months of people talking ill of him and referring to him in the third person. He also complains that his family members are plotting to kill him by poisoning his food. His parents say that the boy is very agitated because of the above complaints and because of his suspicious nature, he hardly eats. On examination his general and systemic examination are normal. His routine investigations are normal. A diagnosis of schizophrenia is made

(10)

- Classify the drugs used in the treatment of schizophrenia.
- Mention the adverse effects of antipsychotics.
- Mention the differences between conventional and second-generation antipsychotics. (3+4+3)

SHORT ESSAY QUESTIONS: 11 X 5 = 55**Answer all the questions.**

22			A 25 year old female complains of fatigue & weakness, gradual in onset over 2 months. Patient gave history of menorrhagia since a year. On investigations, Hb-9g/dl, MCV-70 and low ferritin levels. Vitamin B12 & folate levels were normal. A diagnosis of mild anaemia was made. a) Enlist oral Iron preparations used to treat the above condition. (5) b) Mention adverse effects of oral Iron therapy. c) Enumerate indications for parenteral Iron therapy. (1.5+1.5+2)
23			Discuss the uses and adverse effects of opioid analgesics. (5)
24			Discuss mechanism of action, uses and adverse effects of oral anticoagulants. (1+2+2) (5)
25			A 45-year-old woman is scheduled for an elective total abdominal hysterectomy due to uterine fibroids. Her preoperative assessment shows normal physical examination findings and her laboratory results are within normal limits. The anaesthesia team plans to administer general anaesthesia with an endotracheal tube (ETT) for airway management. As part of the pre-anaesthetic medication regimen, the anaesthesiologist prescribes an anticholinergic drug. (5) a) Explain the rationale for the use of anticholinergic agents in pre-anaesthetic medication. b) Enumerate the other uses of anticholinergic drugs. c) Mention the adverse effects and contraindications of anticholinergics. (1+2+2)
26			Discuss various barriers for implementation of health care as a universal right. (5)
27			A 52 year old female presents to the emergency department with a sudden onset of severe right eye pain, blurred vision and nausea for the past 6 hours. On examination pupil is dilated with sluggish response. Intraocular pressure is elevated. (5) a) State the probable diagnosis. b) State the preferred drug to treat the above patient and describe its mechanism of the action. c) Write the adverse effects of the above drug. (1+2+2)
28			A 60-year-old man is brought to hospital with central crushing chest pain. He has been in pain for several hours and it was not relieved by Nitroglycerin. The man was feeling nauseous and was very anxious. His blood pressure was 140/75. An ECG showed revealed ST segment elevation, pathological Q waves and inversion of the T wave in leads II, III and aVF. A diagnosis of acute inferior myocardial infarction (MI) was made. (5) a) What drugs should be administered immediately to this patient and why? b) What drugs should be prescribed for this patient to take long-term when he returns home and why? (2+3)
29			Discuss the salient features of transdermal therapeutic system. (5)
30			Classify sympathomimetic. Give reasons for the following a) Why Epinephrine is a preferred drug in anaphylaxis? b) Why Salbutamol is used in bronchial asthma? (5) c) Why Tyrosine with MAOI's precipitates cheese reaction? (2+1+2)
31			Enumerate centrally acting skeletal muscle relaxants. Discuss their uses and adverse effects. (1+2.5+1.5) (5)
32			A 70-year-old man presents to the neurology OPD with a short shuffling gait, resting tremors of the hands and slowness of movement. His routine investigations and CT scan (brain) are normal. A diagnosis of Parkinsonism is made. (5) a) Classify the drugs used in the treatment of Parkinsonism with relevant examples in each class. b) Mention any four adverse effects of Levodopa. (3+2)

SHORT ANSWER QUESTIONS: 5 X 3 =15

Answer all the questions.

33			A 45-year-old lady complains of difficulty in falling asleep over the past one month. The history does not reveal any underlying cause for the insomnia. General and systemic examination is normal. Routine investigations are normal. a) Name the non-benzodiazepine hypnotics (Z drugs) (3) b) Reason why non-benzodiazepine hypnotics (Z drugs) are preferred over benzodiazepines. (1+2)
34			A new intern was posted in Medicine department and was asked to examine a hypertensive patient. During treatment history, the patient was found to be on diuretics as one of the add-on drug. Mention which diuretic is commonly prescribed in hypertension and why? (3)
35			Enumerate three groups of drugs used in heart failure with suitable examples. (3)
36			Give any three reasons why calcium channel blockers are preferred over other antihypertensives to treat hypertension. (3)
37			Mention the rationale for the use of Neostigmine in Myasthenia Gravis. (3)

-----End-----



KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI

MBBS Phase - II Degree Examination - September 2026 QP CODE: A008

Pharmacology Paper 2 [PHARM2]

Marks: 100

Duration: 180 mins.

M.C.O: 20 X 1 = 20

Answer all the questions.

Section Duration: 30 mins

1)

--	--	--

 Theophylline acts by inhibiting

1)

--	--	--

 Histamine receptors 2)

--	--	--

 Bradykinin receptors 3)

--	--	--

 Adenosine receptors 4)

--	--	--

 Imidazoline receptors (1)

2)

--	--	--

 Currently, the drug of choice for empiric treatment of typhoid fever is

1)

--	--	--

 Chloramphenicol 2)

--	--	--

 Cotrimoxazole 3)

--	--	--

 Ciprofloxacin 4)

--	--	--

 Ampicillin (1)

3)

--	--	--

 Which of the following enzyme is inhibited by fluoroquinolones?

1)

--	--	--

 Topoisomerase I 2)

--	--	--

 Topoisomerase II 3)

--	--	--

 Topoisomerase III 4)

--	--	--

 DNA gyrase (1)

4)

--	--	--

 Trimethoprim is combined with sulfamethoxazole in a ratio of 1:5 to yield a steady state plasma concentration ratio of

1)

--	--	--

 Trimethoprim 1: Sulfamethoxazole 15 2)

--	--	--

 Trimethoprim 1: Sulfamethoxazole 10 3)

--	--	--

 Trimethoprim 1: Sulfamethoxazole 5 4)

--	--	--

 Trimethoprim 5: Sulfamethoxazole 1 (1)

5)

--	--	--

 Which of the following is a fourth generation cephalosporin?

1)

--	--	--

 Ceftriaxone 2)

--	--	--

 Cefaclor 3)

--	--	--

 Cefepime 4)

--	--	--

 Cefuroxime (1)

6)

--	--	--

 Which of the following drug is used exclusively in organ transplantation and autoimmune diseases, but **NOT** in cancers?

1)

--	--	--

 Cyclophosphamide 2)

--	--	--

 Cyclosporine 3)

--	--	--

 Methotrexate 4)

--	--	--

 6-Mercaptopurine (1)

7)

--	--	--

 Aspirin is **contraindicated** in children suffering from influenza or similar viral infection because of increased risk of

1)

--	--	--

 Gastric bleeding 2)

--	--	--

 Thrombocytopenia 3)

--	--	--

 Fanconi syndrome 4)

--	--	--

 Reye's syndrome (1)

8)

--	--	--

 A 61-year-old woman complained to her physician of increasing tiredness, dry cough and a lump in her right breast. The woman had a history of a hormone-positive carcinoma of her left breast 15 months earlier for which she had a mastectomy and 3 months of chemotherapy. She had been taking tamoxifen daily since ending the chemotherapy. MRI revealed multiple pulmonary and liver metastases. Which of the following drugs would be appropriate to treat the metastatic cancer of this patient?

1)

--	--	--

 Anastrozole 2)

--	--	--

 Flutamide 3)

--	--	--

 Finasteride 4)

--	--	--

 Mifepristone (1)

9)

--	--	--

 A 46-year-old man complained to his physician of muscle weakness, fatigue, constipation, nausea and polyuria. Past medical history was unremarkable. Subsequent laboratory exams showed the following serum values: calcium 14.5 mg/dL, phosphate 2.1 mg/dL and immunoreactive parathyroid hormone 142 pg/mL. A diagnosis of hypercalcemia due to primary hyperparathyroidism was made. Which of the following drugs would be appropriate to include in the therapeutic management of this patient?

1)

--	--	--

 Calcitonin 2)

--	--	--

 Teriparatide 3)

--	--	--

 Calcitriol 4)

--	--	--

 Hydrochlorothiazide (1)

10			A 51-year-old woman with a long history of chronic obstructive pulmonary disease was admitted to the hospital for an acute exacerbation of her disease. The patient's medications on admission were inhaled ipratropium and oral theophylline. Which of the following molecular actions on bronchial smooth muscle most likely contributed to the bronchodilating effect of theophylline in this patient?										(1)							
<table><tr><td>1)</td><td>Stimulation of nitric oxide release</td><td>2)</td><td>Inhibition of phosphodiesterase 4 (PDE4)</td><td>3)</td><td>Activation of adenosine receptors</td><td>4)</td><td>Activation of β_2 adrenoceptors</td></tr></table>													1)	Stimulation of nitric oxide release	2)	Inhibition of phosphodiesterase 4 (PDE4)	3)	Activation of adenosine receptors	4)	Activation of β_2 adrenoceptors
1)	Stimulation of nitric oxide release	2)	Inhibition of phosphodiesterase 4 (PDE4)	3)	Activation of adenosine receptors	4)	Activation of β_2 adrenoceptors													
11			The drug which blocks both H1 and 5 HT2 receptor is										(1)							
<table><tr><td>1)</td><td>Phenoxybenzamine</td><td>2)</td><td>Cyproheptadine</td><td>3)</td><td>Ritanserin</td><td>4)</td><td>Ondansetron</td></tr></table>													1)	Phenoxybenzamine	2)	Cyproheptadine	3)	Ritanserin	4)	Ondansetron
1)	Phenoxybenzamine	2)	Cyproheptadine	3)	Ritanserin	4)	Ondansetron													
12			The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDs because they										(1)							
<table><tr><td>1)</td><td>Cause sodium excretion</td><td>2)</td><td>Increase the clearance of antihypertensive drugs</td><td>3)</td><td>Decrease the absorption of antihypertensive drugs</td><td>4)</td><td>Decrease the synthesis of vascular prostacyclin</td></tr></table>													1)	Cause sodium excretion	2)	Increase the clearance of antihypertensive drugs	3)	Decrease the absorption of antihypertensive drugs	4)	Decrease the synthesis of vascular prostacyclin
1)	Cause sodium excretion	2)	Increase the clearance of antihypertensive drugs	3)	Decrease the absorption of antihypertensive drugs	4)	Decrease the synthesis of vascular prostacyclin													
13			Ulipristal acetate is										(1)							
<table><tr><td>1)</td><td>GnRH agonist</td><td>2)</td><td>Androgen antagonist</td><td>3)</td><td>Selective estrogen receptor modulator</td><td>4)</td><td>Selective progesterone receptor modulator</td></tr></table>													1)	GnRH agonist	2)	Androgen antagonist	3)	Selective estrogen receptor modulator	4)	Selective progesterone receptor modulator
1)	GnRH agonist	2)	Androgen antagonist	3)	Selective estrogen receptor modulator	4)	Selective progesterone receptor modulator													
14			The excess risk of thromboembolism is due to which component of oral contraceptive pills?										(1)							
<table><tr><td>1)</td><td>Progesterone</td><td>2)</td><td>Oestrogen</td><td>3)</td><td>Iron</td><td>4)</td><td>Excipients</td></tr></table>													1)	Progesterone	2)	Oestrogen	3)	Iron	4)	Excipients
1)	Progesterone	2)	Oestrogen	3)	Iron	4)	Excipients													
15			Transfusion siderosis can be treated by										(1)							
<table><tr><td>1)</td><td>Desferrioxamine</td><td>2)</td><td>Pencillamine</td><td>3)</td><td>Dimercaprol</td><td>4)</td><td>Calcium disodium edetate</td></tr></table>													1)	Desferrioxamine	2)	Pencillamine	3)	Dimercaprol	4)	Calcium disodium edetate
1)	Desferrioxamine	2)	Pencillamine	3)	Dimercaprol	4)	Calcium disodium edetate													
16			Which of the following is NOT a killed (inactivated) vaccine?										(1)							
<table><tr><td>1)</td><td>Hepatitis B</td><td>2)</td><td>Hepatitis A</td><td>3)</td><td>OPV (Sabin)</td><td>4)</td><td>DPT</td></tr></table>													1)	Hepatitis B	2)	Hepatitis A	3)	OPV (Sabin)	4)	DPT
1)	Hepatitis B	2)	Hepatitis A	3)	OPV (Sabin)	4)	DPT													
17			Leukotriene receptor antagonist used for bronchial asthma is										(1)							
<table><tr><td>1)</td><td>Zafirlukast</td><td>2)</td><td>Zileuton</td><td>3)</td><td>Cromolyn sodium</td><td>4)</td><td>Aminophylline</td></tr></table>													1)	Zafirlukast	2)	Zileuton	3)	Cromolyn sodium	4)	Aminophylline
1)	Zafirlukast	2)	Zileuton	3)	Cromolyn sodium	4)	Aminophylline													
18			One of the most common side effects of inhaled beclomethasone dipropionate is										(1)							
<table><tr><td>1)</td><td>Pneumonia</td><td>2)</td><td>Oropharyngeal candidiasis</td><td>3)</td><td>Atrophic rhinitis</td><td>4)</td><td>Pituitary adenoma</td></tr></table>													1)	Pneumonia	2)	Oropharyngeal candidiasis	3)	Atrophic rhinitis	4)	Pituitary adenoma
1)	Pneumonia	2)	Oropharyngeal candidiasis	3)	Atrophic rhinitis	4)	Pituitary adenoma													
19			A 34-year-old hospitalized male patient complained of torticollis, grimacing and spasm of the ocular muscles 1 day after surgery. The man had received an intravenous drug soon after surgery to treat nausea and vomiting. Which of the following antiemetic drugs most likely caused the patient's symptoms?										(1)							
<table><tr><td>1)</td><td>Ondansetron</td><td>2)</td><td>Scopolamine</td><td>3)</td><td>Dronabinol</td><td>4)</td><td>Metoclopramide</td></tr></table>													1)	Ondansetron	2)	Scopolamine	3)	Dronabinol	4)	Metoclopramide
1)	Ondansetron	2)	Scopolamine	3)	Dronabinol	4)	Metoclopramide													
20			A 45-year-old man recently diagnosed with mild colonic Crohn's disease had been receiving sulfasalazine for 4 weeks, but remission was not achieved. Prednisone was added for another 2 weeks, but improvement was negligible and the gastroenterologist decided to add a third drug to the therapy. Which of the following drugs would be appropriate for the patient at this time?										(1)							
<table><tr><td>1)</td><td>Infliximab</td><td>2)</td><td>Mesalamine</td><td>3)</td><td>Dexamethasone</td><td>4)</td><td>Amikacin</td></tr></table>													1)	Infliximab	2)	Mesalamine	3)	Dexamethasone	4)	Amikacin
1)	Infliximab	2)	Mesalamine	3)	Dexamethasone	4)	Amikacin													

LONG ESSAY QUESTIONS: 1 X 10 = 10

Answer all the questions.

21			An 8 year old child was brought to the emergency department with the history of dehydration following two days fever, vomiting and weight loss. His blood investigation showed increased blood glucose levels and ketone bodies in the urine. He was diagnosed with type I Diabetes mellitus. a) Enumerate the pharmacotherapy of type I Diabetes mellitus with detailed uses and adverse effects. b) Explain in detail the management of diabetic ketoacidosis.	(10)
----	--	--	--	------

c) Write the follow-up advices and precautions to be taken for the routine treatment. (4+4+2)

SHORT ESSAY QUESTIONS: 11 X 5 = 55

Answer all the questions.

22			A 40-year-old male patient came to the hospital with complaints of fever, malaise, headache, weakness and pain in abdomen for last 7 days. After examination and investigation with positive Widal test, patient was diagnosed to be suffering from enteric fever. a) Enumerate the group of drugs given for the above condition. (5) b) Explain in detail the mechanism of action of any one group of drug used for treating the above condition. (3+2)
23			A 30 year old male taxi driver by profession comes with complaints of allergic rhinitis. a) Enumerate the antihistaminics. b) Mention the advantages of 2nd generation antihistaminics over the 1st generation. (5) c) What are the other two uses of these drugs? (2+2+1)
24			A 50 year old male diagnosed to have a lung cancer is on chemotherapy. After one week of treatment he experienced severe vomiting and visited his oncologist with the history of chemotherapy induced vomiting. Enumerate the antiemetic agents. Explain in detail the mechanism of action and adverse effects of drugs given for chemotherapy induced vomiting. (2+3) (5)
25			Enumerate Oral contraceptive pills (OCPs). Explain the mechanism of action and role of hormonal components with a neat diagram. (2+3) (5)
26			Enumerate Inhalational drugs used in bronchial asthma. Mention the advantages and adverse effects of steroid drugs. (2+3) (5)
27			Discuss the role of immunosuppressants in organ transplantation. (5)
28			A 24 year old male patient complaint of pain and swelling in right wrist and left ankle joint with early morning stiffness. No history of fever, chills, night sweats, weight loss or rash. On examination, joints were erythematous and tender to touch. He had limited range of movements. RA factor was positive and was diagnosed with rheumatoid arthritis. (5) a) Enumerate different class of drugs used to treat above condition. b) Discuss the importance of disease modifying anti-rheumatoid drugs. (3+2)
29			Enumerate antimicrobial drug resistance with suitable examples. (5)
30			Enlist Anti Tubercular drugs. Explain the mechanism of action and two side effects of Bedaquiline. (2+2+1) (5)
31			A 48 year old woman comes to a clinic with swollen lymph nodes in her neck, armpits and groin, with mild fever, weight loss and large spleen. She was diagnosed to have lymphoma a form of a cancer and her husband was frightened and worried to reveal cancer to his wife and was asking the physician to lie regarding her true diagnosis. (5) a) Does the patient have a fundamental right to know her true diagnosis? Explain her rights in detail. b) What is the importance of paternalism in this case. (2+3)
32			What are chelating agents? Enumerate in detail the importance of them with three suitable examples. (2+3) (5)

SHORT ANSWER QUESTIONS: 5 X 3 =15

Answer all the questions.

33			What is the rationale of use of Sildenafil in erectile dysfunction? (3)
34			Give Pharmacological basis for use of Colchicine in acute attack of Gout. (3)

35			Ketoconazole is a drug of choice for dermatophytosis. Justify its use and add its two adverse effects.	(3)
36			What the rationale behind combination therapy in acne vulgaris?	(3)
37			What is Superinfection? Write the Rationale of using narrow spectrum antimicrobials for the same.	(3)

-----End-----