

# PUNJAB PUBLIC SERVICE COMMISSION

## Competitive Examination (May-2017) for Recruitment of Lecturer Medical Lab Technology in the Department of Technical Education & Industrial Training, Government of Punjab

READ INSTRUCTIONS BEFORE FILLING ANY DETAILS OR ATTEMPTING TO ANSWER THE QUESTIONS.

Candidate's Name \_\_\_\_\_

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

Date of Birth             

DD                      MM                      YYYY

Category Code\*   

(\*as given in the admit card)



OMR Response Sheet No. \_\_\_\_\_

Roll No. \_\_\_\_\_

Booklet No.

Candidate's Signature (Please sign in the box)

### INSTRUCTIONS

<p>1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant columns (other than the columns related to marking responses to the questions) of the Optical Mark Reader(OMR) response sheet, supplied separately</p>	<p>9. The candidates shall be responsible to ensure that the responses are marked in correct manner and any adverse impact due to wrong marking of responses would be the responsibility of the respective candidate. The following are some of the <b>examples of wrong marking</b> of responses on the OMR response sheet.</p> <div style="text-align: center;">  </div>
<p>2. <b>Use only blue or black ball point pen</b> to fill the relevant columns on this page. Use of fountain pen may leave smudges which may make the information given by the candidate here illegible.</p> <p>3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible.</p>	<p>10. The candidates, when allowed to open the question paper booklet, are advised to check the booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should immediately bring this fact to the notice of the invigilation Staff and obtain a booklet of the same series as this one.</p>
<p>4. The candidate must fill all the columns given above on this page and sign at the appropriate place.</p> <p>5. <b>Each candidate is required to attempt 100 questions in 120 minutes</b>, except for orthopaedically/visually impaired candidates, who would be given 40 minutes extra, by marking correct responses on the OMR sheet which would be supplied separately to the candidates</p>	<p>11. The serial number of the new booklet should be entered in the relevant column of the OMR. The candidate should request the Invigilation Staff to authenticate the change in serial number of question booklet by obtaining the initials of the Staff on the corrected serial number of the question booklet</p>
<p>6. <b>The candidate must write the following on the OMRs sheet:</b>                  (a)Serial number of OMR sheet supplied to him/her for marking the responses to the questions.                  (b)Serial number of the question booklet  <b>Failure to do so may lead to cancellation of candidature or any other action which the Commission may deem fit.</b></p>	<p>12. The question paper booklet has 15 pages.</p> <p>13. <b>Each question shall carry three marks.</b></p>
<p>7. <b>The candidate should darken the appropriate response to the question by completely darkening the appropriate circle/oval</b> according to his/her choice of response i.e. a, b, c or d in the manner shown in the example below.</p> <div style="text-align: center;"> <p>a                      b                      c                      d</p>  </div>	<p>14. <b>There are four options for each question and the candidate has to mark the most appropriate answer on the OMR response sheet using blue or black ball point pen.</b></p>
<p>8. Partly darkening the circle/oval on the OMR response sheet or using other symbols such as tick mark or cross would not result in evaluation of the response as the OMR scanner can only interpret the answers by reading the darkened responses in the manner explained in preceding paragraph. Darkening more than one circle/oval as response to a question shall also be considered as wrong answer.</p>	<p>15. <b>There is no negative marking</b> for wrong answers or questions not attempted by the candidate.</p>

1. Which of the following revenue settlements did the British introduce in Punjab?
  - (a) Permanent Settlement
  - (b) Ryotwari
  - (c) Mahalwari
  - (d) Taluqdari
  
2. Which of the following regions in India are a biodiversity hotspot?
  1. Western Ghats
  2. Eastern Ghats
  3. Eastern Himalayas
  4. Western Himalayas
  - (a) 1 & 2
  - (b) 1 & 3
  - (c) 1,2 &3
  - (d) 2 &4
  
3. Heterotrophs are \_\_\_\_\_ in an ecosystem.
  - (a) Producers
  - (b) Consumers
  - (c) Decomposers
  - (d) Synthesizers
  
4. Which of the following does NOT describe a metal?
  - (a) Malleable and ductile
  - (b) Good conductor of electricity
  - (c) Lustrous and can be polished
  - (d) Brittle
  
5. Dadabhai Naoroji wrote a detailed critique of:
  - (a) British revenue policy
  - (b) Deindustrialization
  - (c) Industrial development
  - (d) Drain of wealth
  
6. Who founded the Ghadar party in 1913?
  - (a) Lala Hardayal
  - (b) Lala Lajpat Rai
  - (c) Bhagat Singh
  - (d) Udham Singh
  
7. The equilibrium price in the market is the price at which:
  - (a) Everything is sold
  - (b) The buyers spend all their incomes
  - (c) The quantity demanded is just equal to the quantity supplied
  - (d) The price falls to zero

8. Where was the last Mughal emperor, Bahadur Shah Zafar exiled by the British?
- (a) Rangoon
  - (b) Andamans
  - (c) Peshawar
  - (d) Maldives
9. When did the Simon Commission arrive in India?
- (a) 1928
  - (b) 1929
  - (c) 1930
  - (d) 1931
10. The gradual enrichment of lakes is known as:
- (a) Exfoliation
  - (b) Eutrophication
  - (c) Denudation
  - (d) Ecological succession
11. Why is red light employed for danger signals?
- (a) Red colour is soothing to the eye
  - (b) Human eye is most sensitive to red colour
  - (c) Red light is scattered least
  - (d) Red light is scattered most
12. The Revenue Neutral Rate (RNR) for GST is:
- (a) The rate at which the Centre has enough revenue
  - (b) The rate at which the government continues to receive same revenue from the proposed tax structure as in the prevalent tax structure
  - (c) The rate at which states receive no revenue at all
  - (d) The rate at which the centre and state get 50% each of total revenue
13. Which word completes the sentence: Water \_\_\_\_\_ when it freezes?
- (a) Expands
  - (b) Contracts
  - (c) Dissolves
  - (d) Conducts
14. The Rachna doab lies between the:
- (a) River Beas and River Ravi
  - (b) River Chenab and River Jhelum
  - (c) River Beas and River Satluj
  - (d) River Ravi and River Chenab

15. What type of clouds produce heavy rain, lightning, thunder, hail and strong winds?
- (a) Cumulonimbus
  - (b) Cirrocumulus
  - (c) Cirrostratus
  - (d) Cumulus
16. Which of the following countries is not included in the Nuclear Suppliers Groups (NSG)?
- (a) Sweden
  - (b) Ireland
  - (c) India
  - (d) Latvia
17. The concept of 'Disguised Unemployment' implies:
- (a) Surplus labour force
  - (b) Marginal Productivity of labour is zero
  - (c) It is not counted in official unemployment statistics within the national economy
  - (d) All of the above
18. Who proposed the theory of Hierarchy of Needs?
- (a) Milton J Esman
  - (b) Ferrel Heady
  - (c) Abraham Maslow
  - (d) Paul J Appleby
19. What is the meaning of a Secular State?
- (a) State that only protects the religious rights of the minority
  - (b) State that does not protect any one particular religion
  - (c) State that separates administration and politics
  - (d) State that suppresses religious freedom
20. The khadar floodplains of Punjab are called:
- (a) Bet
  - (b) Pat
  - (c) Rohi
  - (d) Dhrian
21. Aryabhata was an ancient \_\_\_\_\_.
- (a) Priest
  - (b) Astronomer & Mathematician
  - (c) Warrior
  - (d) Ruler
22. Inflation is a situation of:
- (a) Too much money chasing too few goods
  - (b) Too much money available for increased supply of goods
  - (c) Aggregate supply exceeds aggregate demand
  - (d) None of the above

23. Which of the following are constitutional provisions and laws for the protection of the rights of the Scheduled Castes in India?
1. Article 17 of the Constitution of India
  2. The Protection of Civil Rights Act, 1955
  3. The Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989
- Select the correct answer using the code given below:
- (a) 1 and 3 only
  - (b) 1 and 2 only
  - (c) 1, 2 and 3
  - (d) 2 and 3 only
24. Which of the following countries is not a member of Shanghai Cooperation Organisation (SCO)?
- (a) Russia
  - (b) Kyrgyzstan
  - (c) Kazakhstan
  - (d) Turkmenistan
25. Which one of the following writs is issued by the Supreme Court to secure the freedom of a person upon unlawful arrest?
- (a) Habeas Corpus
  - (b) Mandamus
  - (c) Certiorari
  - (d) Quo Warranto
26. According to the provisions of the Constitution of India, which one of the following is not a fundamental duty?
- (a) To respect the National Flag
  - (b) To defend the country
  - (c) To provide education to one's child
  - (d) To promote village and cottage industries
27. Which one of the following is not one of the Commands of the Indian Army?
- (a) South Western Command
  - (b) North Eastern Command
  - (c) Central Command
  - (d) Army Training Command (ARTRAC)
28. Which one of the following is not an Air Defence Missile system?
- (a) Akash
  - (b) Trishul
  - (c) Tatra
  - (d) Astra

29. Which one of the following is not an allotrope of carbon?
- (a) Coal
  - (b) Diamond
  - (c) Graphite
  - (d) Graphene
30. Deficiency of fluoride leads to which one of the following health problems?
- (a) Tooth caries
  - (b) Mottling of tooth
  - (c) Bending of bones
  - (d) Stiffening of joints
31. When calcium level in blood is lowered, it stimulates the release of hormone \_\_\_\_\_ to regulate calcium level.
- (a) Thyrocalcitonin
  - (b) Parathormone
  - (c) 1,25- dihydroxycholecalciferol
  - (d) All of the above
32. Which genus is the most common anaerobic human pathogen?
- (a) Bacteroides
  - (b) Spirochetes
  - (c) Chlamydia
  - (d) Methanopyrus
33. When pathogenic bacterial cells loose the ability to make adhesions, they typically:
- (a) Become avirulent
  - (b) Produce endotoxin
  - (c) Absorb endotoxin
  - (d) Increase in virulence
34. Which of the following is NOT characteristic of mycoplasmas?
- (a) Cytochromes
  - (b) Sterols in cytoplasmic membranes
  - (c) Use of UGA codon for tryptophan
  - (d) rRNA nucleotide sequences similar to those of Gram-positive bacteria
35. Which of the following organisms are transmitted via sexual contact?
- (a) *Treponemapallidumendemicum*
  - (b) *Treponemapallidumpertenue*
  - (c) *Treponemapallidumpallidum*
  - (d) *Treponemacarateum*

36. Subcutaneous infections tend to be acquired through:
- (a) Inhalation and remain localized
  - (b) Inhalation and remain systemic
  - (c) Trauma and remain localized
  - (d) Trauma and become systemic
37. Which of the following disease is NOT caused by category A Biological weapon agents?
- (a) Smallpox
  - (b) Plague
  - (c) Q-fever
  - (d) Tularemia
38. For investigation of microcytic anaemia, it is necessary to measure \_\_\_\_\_ in the serum.
- (a) Vitamin B<sub>12</sub>
  - (b) Folic acid
  - (c) Both a and b
  - (d) Ferritin
39. In abetalipoproteinemia, the biochemical defect is in:
- (a) Apo-B synthesis
  - (b) Lipoprotein lipase activity
  - (c) Cholesterol ester hydrolase
  - (d) LCAT activity
40. One of the major roles of HDL cholesterol is to maintain equilibrium of cholesterol in peripheral cells by:
- (a) Exogenous pathway
  - (b) Endogenous pathway
  - (c) Reverse transport pathway
  - (d) Forward transport pathway
41. Stains commonly used for staining cerebrospinal fluid proteins separated by electrophoresis is:
- (a) Nitrobluetetrazolium
  - (b) Ethidium bromide
  - (c) Oil red O
  - (d) Silver nitrate
42. Process of collection of sweat is known as:
- (a) Paracentesis
  - (b) Iontophoresis
  - (c) Anthrocentesis
  - (d) Amniocentesis

43. A plane that separates the body into unequal right and left sides is a:
- (a) Transverse plane
  - (b) Mid sagittal plane
  - (c) Parasagittal plane
  - (d) Coronal plane
44. The process by which microorganisms attach themselves to cells is:
- (a) Infection
  - (b) Contamination
  - (c) Disease
  - (d) Adhesion
45. A direct fluorescent antibody test requires which of the following:
- (a) Heat inactivated serum
  - (b) Antibodies against the antigen
  - (c) Immune complexes
  - (d) Heated plasma
46. Of the following fungi, which is usually transmitted from person to person?
- (a) *Blastomyces dermatitidis*
  - (b) *Coccidioides immitis*
  - (c) *Trichophyton rubrum*
  - (d) *Aspergillus fumigatus*
47. A segmented genome is one that:
- (a) Has more than one segment of nucleic acid
  - (b) Has double-stranded RNA
  - (c) Has both DNA and RNA strands
  - (d) Has both +ssRNA and –ssRNA molecules
48. Food fermentation do all the following EXCEPT:
- (a) Give food a characteristic taste
  - (b) Lower the risk of food spoilage
  - (c) Sterilize foods
  - (d) Increase the shelf-life of the food
49. Polycythemia is due to increased:
- (a) Erythrocytes
  - (b) Leukocytes
  - (c) Lymphocytes
  - (d) Thrombocytes



50. Chronic myeloid leukaemia is mainly due to:
- (a) Translocation (8; 21)
  - (b) Translocation (11; 19)
  - (c) Translocation (6; 11)
  - (d) Translocation (9; 22)
51. Prothrombin time is prolonged in:
- (a) Vitamin K deficiency
  - (b) Liver damage
  - (c) Both a and b
  - (d) Kidney damage
52. Which of the following is best suited to get the surface view of an object?
- (a) Light microscope
  - (b) Compound microscope
  - (c) Transmission electron microscope
  - (d) Scanning electron microscope
53. In the process of freeze drying, a dense cell suspension is placed in small vials and is frozen at:
- (a)  $-4^{\circ}\text{C}$
  - (b)  $-60^{\circ}\text{C}$  to  $-78^{\circ}\text{C}$
  - (c)  $-30^{\circ}\text{C}$  to  $-48^{\circ}\text{C}$
  - (d)  $-10^{\circ}\text{C}$  to  $-20^{\circ}\text{C}$
54. A liquid scintillation detector is NOT suitable for measurement of radioactivity of:
- (a)  $^3\text{H}$
  - (b)  $^{14}\text{C}$
  - (c)  $^{125}\text{I}$
  - (d)  $^{32}\text{P}$
55. Apolipoproteinapo B-48 is present on:
- (a) HDL
  - (b) LDL
  - (c) VLDL
  - (d) Chylomicrons
56. Congenital galactosemia can lead to:
- (a) Mental retardation
  - (b) Premature cataract
  - (c) Death
  - (d) All of the above

57. Faecalurobilinogen is increased in:
- (a) Hemolytic jaundice
  - (b) Obstruction of biliary tract
  - (c) Extrahepatic gall stones
  - (d) Enlarged lymph nodes
58. LDH 1 and LDH 2 are elevated in:
- (a) Liver disease
  - (b) Myocardial infarction
  - (c) Kidney disease
  - (d) Brain disease
59. Which of the following statements is relevant in explaining why sulfonamides are effective?
- (a) Sulfonamides attach sterol lipids in the pathogen, disrupt the membranes and lyse the cells
  - (b) Humans and microbes use PABA differently in their metabolism
  - (c) Sulfonamides prevent the incorporation of amino acids into polypeptide chain
  - (d) Sulfonamides inhibit DNA replication in both pathogens and human cells
60. Carrageenan is found in the cell walls of which group of algae?
- (a) Red algae
  - (b) Green algae
  - (c) Dinoflagellates
  - (d) Yellow-green algae
61. A coliform bacterium that contaminates dairy products is\_\_\_\_\_.
- (a) Bartonella
  - (b) Serratia
  - (c) Enterobacter
  - (d) Proteus
62. Of the following fungal diseases, which is found in almost all terminal AIDS patients?
- (a) Chromoblastomycosis
  - (b) Blastomycosis
  - (c) Candidiasis
  - (d) Mycetoma
63. A distinguishing feature of poxvirus is\_\_\_\_\_.
- (a) Its large size
  - (b) A polyhedral capsid
  - (c) The type of RNA it contains
  - (d) The production of several types of warts

64. Assume you stain *Bacillus* by applying malachite green with heat and then counterstain with safranin. When observed in the microscope, the green structures are:
- (a) Cell wall
  - (b) Capsule
  - (c) Endospore
  - (d) Flagella
65. Which is NOT the characteristic of IgE antibody?
- (a) It is monomer
  - (b) Associated with delayed type of hypersensitivity reaction
  - (c) Associated with immediate type hypersensitivity reaction
  - (d) Associated with allergic reactions
66. During pregnancy, erythropoietin level is:
- (a) Increased
  - (b) Decreased
  - (c) No change
  - (d) Drastically reduced
67. Most reliable and widely used test for detection of chronic intravascular haemolysis is:
- (a) Haemoglobin electrophoresis
  - (b) Schumm's test
  - (c) Serum haptoglobin
  - (d) Urinary hemosiderin
68. Normal adult haemoglobin contains the following polypeptide chain:
- (a) Alpha and beta
  - (b) Alpha and epsilon
  - (c) Alpha and delta
  - (d) Beta and delta
69. Diabetes insipidus is caused by deficiency of:
- (a) ADH
  - (b) Insulin
  - (c) Thyroxine
  - (d) Oxytocin
70. LH hormone, secreted by anterior pituitary gland, stimulates:
- (a) Functioning of Sertoli cells
  - (b) Leydig cells to release androgen
  - (c) Spermatogenesis in seminiferous tubules
  - (d) Stimulate spermiogenesis

71. Olfactory signals act through formation of a secondary messenger called as:
- (a) cAMP
  - (b) cGMP
  - (c)  $\text{Ca}^{+2}$
  - (d)  $\text{IP}_3$
72. Renal auto regulation occurs due to:
- (a) Myogenic mechanism
  - (b) Tubuloglomerular feed- back mechanism
  - (c) Both a & b
  - (d) Does not occur
73. The key to successful chemotherapy is:
- (a) Selective toxicity
  - (b) A diffusion test
  - (c) The minimum inhibitory concentration test
  - (d) The spectrum of action
74. Fungal allergens generally stimulate what type of reaction?
- (a) Type I hypersensitivity reaction
  - (b) Type II hypersensitivity reaction
  - (c) Type III hypersensitivity reaction
  - (d) Type IV hypersensitivity reaction
75. Which of the following is most effective in preventing infection by Giardia?
- (a) Sexual abstinence
  - (b) Drinking only boiled water
  - (c) Use of insect repellent
  - (d) Cooking all food
76. Which of the following tissue is avascular?
- (a) Cardiac muscle
  - (b) Skeletal muscle
  - (c) Compact bone
  - (d) Stratified squamous epithelium
77. Stimulation of parasympathetic nervous system supplying to heart causes:
- (a) No change in heart rate
  - (b) Increases the heart beat
  - (c) Decreases the heart beat
  - (d) All of the above as per physiological condition
78. Sodium reabsorption in distal convoluted tubules is regulated by:
- (a) Mineralocorticoids
  - (b) Glucocorticoids
  - (c) Thyroid hormones
  - (d) Pancreatic hormones

79. For digestion and absorption of lipid, emulsification is required which is done by bile salts as they are:
- (a) Hydrophilic in nature
  - (b) Hydrophobic in nature
  - (c) Amphipathic in nature
  - (d) Acidophilic in nature
80. Which of the following method is best for counting faecal bacteria from a stream to determine the safety of the water for drinking?
- (a) Dry weight
  - (b) Turbidity
  - (c) Viable plate counts
  - (d) Membrane filtration
81. Which of the following is a good test to detect rabies virus in the brain of a dog?
- (a) Agglutination
  - (b) Virus neutralization
  - (c) Direct fluorescent antibody
  - (d) Precipitation
82. In which of the following diseases would a patient experience pseudomembrane covering the tonsils, pharynx and larynx?
- (a) Tuberculoid leprosy
  - (b) Diphtheria
  - (c) Arrhythmia
  - (d) Tetanus
83. Which of the following is added during water or sewage treatment to promote flocculation?
- (a) Sludge
  - (b) PHA
  - (c) BOD
  - (d) Alum
84. The hexose monophosphate shunt pathway activity increases the RBC source of:
- (a) Glucose
  - (b) 2, 3- bisphosphoglycerate
  - (c) Reduced glutathione
  - (d) Purine metabolites
85. When a surgeon removes the entire area of diseased tissue/organ from the body, the process is termed as:
- (a) Excisional biopsy
  - (b) Incisional biopsy
  - (c) Core biopsy
  - (d) Needle aspiration biopsy

86. Having higher resolution in a microscope, it must be equipped with illumination of :
- (a) Long wavelength light with less nuclear aperture
  - (b) Long wavelength light with high nuclear aperture
  - (c) Short wavelength light with less nuclear aperture
  - (d) Short wavelength light with high nuclear aperture
87. Vital staining demonstrates the viability of the cell by phagocytosis of particle of the dye, termed as:
- (a) Dye exclusion
  - (b) Dye inclusion
  - (c) Dye impregnation
  - (d) None of the above
88. Which is not the function of glucocorticosteroids produced by adrenal cortex?
- (a) Gluconeogenesis
  - (b) Antiinflammatory
  - (c) Immunosuppressive
  - (d) Osmoregulatory
89. Severe hypertriglyceridemia is a potentially life threatening abnormality because it causes:
- (a) Chronic heart disease
  - (b) Atherosclerosis
  - (c) Acute pancreatitis
  - (d) Myocardial infarction
90. Reye's syndrome is a term used to describe a group of disorders caused by abnormalities in:
- (a) Lung
  - (b) Liver
  - (c) Kidney
  - (d) All of the above
91. Kidney is the source of hormone/s:
- (a) Erythropoietin
  - (b) 1, 25- dihydroxycholecalciferol
  - (c) Renin-angiotensin system
  - (d) All of the above
92. Which of the following substances would most effectively inhibit anaerobes?
- (a) Phenol
  - (b) Silver
  - (c) Ethanol
  - (d) Hydrogen peroxide

93. Which class of surfactant is most soluble in water?
- (a) Quaternary ammonium compounds
  - (b) Alcohol
  - (c) Soaps
  - (d) Peracetic acids
94. Multiple-drug resistant microbes \_\_\_\_\_.
- (a) Are resistant to all antimicrobial agents
  - (b) Respond to new antimicrobials by developing resistance
  - (c) Frequently develop in hospitals
  - (d) All of the above
95. The only genus of Gram-negative cocci that causes significant disease in human beings is \_\_\_\_\_.
- (a) Pasteurella
  - (b) Salmonella
  - (c) Klebsiella
  - (d) Neisseria
96. Which of the following is NOT true of cholera?
- (a) The causative agent lives naturally in marine water
  - (b) There is an effective vaccine for cholera
  - (c) Strain 01 El Tor has been responsible for several pandemics
  - (d) Rice-water stool is a symptom
97. Reticulocytes retain:
- (a) Mitochondria
  - (b) Small number of ribosomes
  - (c) Remnant of Golgi complex
  - (d) All of the above
98. Which of the following microtome knife is preferred most for paraffin embedded soft tissue sectioning:
- (a) Planar concave knife
  - (b) Wedge knife
  - (c) Biconcave knife
  - (d) Tool wedge

99. The amphoteric stain is a dye which is:

- (a) Cationic below its isoelectric point
- (b) Anionic below its isoelectric point
- (c) Cationic above its isoelectric point
- (d) None of the above

100. In hypoparathyroidism:

- (a) Plasma calcium and inorganic phosphorus are low
- (b) Plasma calcium and inorganic phosphorus are high
- (c) Plasma calcium is low and inorganic phosphorus is high
- (d) Plasma calcium is high and inorganic phosphorus is low

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