B-34

ENTRANCE EXAMINATIONS – 2022

(Ph.D. Admissions July 2022)

PhD Health Sciences (Biomedical Sciences)

HALL TICKET NUMBER

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ANSWERING THE QUESTIONS

INSTRUCTIONS

i) This Booklet has ten (10) pages. Please check the pages.

ii) Write your Hall Ticket Number in the OMR Answer Sheet given to you. Also write the Hall Ticket Number in the space provided above.

iii) There are 2(two) parts in the question paper- Part A (Question Numbers 1-35) and Part B (Question Numbers 36-70).

iv) Each question carries 1 mark and there is no negative marking.

v) Answers are to be marked in the OMR Answer sheet following the instructions provided there upon.

vi) Hand over the OMR answer sheet at the end of the examination to the invigilator.

vii) No additional sheets will be provided. Rough work can be done in the question paper itself/ space provided at the end of the booklet.

PART-A

1. In a coding system 'APPLE' is coded as 'MANGO', find out the code for 'GUAVA'
A. BANANA
B. GRAPES
C. KIWI
D. PEAR

2. Which among the following years did not have 366 days?
A. 1976
B. 1982
C. 2004
D. 2016

3. Find out the next number in the given series 1, 27, 125, _____
A. 216

B. 343
C. 512
D. 720

4. Which of the following is a qualitative variable?
A. Haemoglobin values of the patients
B. Body weight of the patients
C. Heart beat rate of the patients
D. Disease symptoms of the patients

5. Saturday is a day on the 3rd of a month, what day will it be on the 25th of the same month?
A. Sunday
B. Monday
C. Saturday
D. Friday

6. One health triad refers to:
A. Man Women and Child
B. Primary, secondary and tertiary health care
C. Centre, state and rural health programs
D. Agent, Host, Environment

7. The first step in conducting a research is
A. Propounding a hypothesis
B. Data collection
C. Defining a problem
D. Formulation of objectives

8. The gold standard laboratory test used to detect SARS CoV2 infection is:
A. RT-PCR
B. RAT
C. CRP
D. ELISA

9. When the participants in a research study are known but their identifying information is removed from your research article, you are following an ethical consideration referred to as
A. Confidentiality
B. Anonymity
C. Neutrality
D. Plagiarism

10. Body mass index is calculated as:
A. weight in pounds by height in meters
B. weight in kg by height in meters
C. weight in kg divided by square of height in meter squared
D. weight in kg divided by body surface area

11. What is an inoculating loop?
A. A tool used to streak a microorganism in a pure culture
B. A tool used to place agar in a pure medium

C. A tool used to count colonies of microorganisms
D. A tool used to view colonies of microorganisms

12. What is an enrichment culture?
A. Something that provides growth for all microorganisms
B. Something that inhibits growth for all microorganisms
C. An infectious culture
D. Something that provides growth for a certain microorganism but not for others

13. A genetic marker is
A. a place where a restriction enzyme cuts DNA
B. a chart the traces the family history of a genetic trait
C. a nucleotide sequence near a particular gene
D. a radioactive probe used to find a gene

14. The basic difference between ELISA and RIA lies in
A. primary antibody
B. blocking agent
C. type of microtitre plate
D. label conjugated to secondary antibodies

15. Animal cell culture is quite popular in raising:
A. hormones
B. enzymes
C. bacteria
D. vaccines

16. The following are methods for control of confounding except:
A. Restriction
B. Matching
C. Ensuring use of accurate instruments
D. Stratified analysis

17. All of the following are ethical principles except?
A. Justice
B. Malpractice
C. Beneficence
D. Non-Maleficence

18. The scatter plot is used to depict:
A. Causality
B. Correlation
C. Power
D. Type II error

19. A circle divided into sectors proportional to the frequency of items shown is called:
A. Bar chart
B. Pie chart
C. Frequency polygon
D. Histogram

20. In Qualitative Research, the data is in the form of:
A. Words
B. Numbers
C. Integers
D. Fractions

21. The type of study to find Haemoglobin level pattern among adolescents of age 14 to 19 years of each gender residing in a defined area is called:
A. Pilot Study
B. Observational Study
C. Descriptive Study
D. Analytical Study

22. WHO recommended method of sampling to estimate immunization coverage in developing countries is:
A. Simple Random Sampling
B. Multistage Random Sampling
C. Stratified Random Sampling
D. Cluster Random Sampling

23. Matching in case-control studies is done to control uncertainties due to:
A. Loss of patient to follow up
B. Sampling fluctuation
C. Lack of statistical power
D. Bias arising from confounders

24. Longitudinal studies:
A. Can provide Incidence of Disease
B. Are Economical
C. Are good for studying rare outcomes
D. Are easy to conduct

25. Coefficient of Variation is:
A. Mean/SD
B. SD/Mean
C. Mean/Variance
D. Variance/Mean

26. Which test is the part of the parametric test?
A. Sign Test
B. Run Test for Randomness
C. Kruskal-Willis Test
D. z-test

27. What type of chart is useful for showing trends or changes over time?
A. Pie Chart
B. Column Chart
C. Line Chart
D. Dot Graph

28. The split-half method is used as a test to determine:
A. Stability
B. Internal reliability
C. Inter-observer consistency
D. External validity

29. Find the median of the call received on 7 consecutive days 11, 13, 17, 13, 23, 25, 19:
A. 13
B. 23
C. 25
D. 17

30. A show card is:
A. One that prevents respondents from expressing their opinions about a statement
B. One that encourages explicit discussion of sensitive or personal information
C. One that prompts respondents to choose from a range of possible answers
D. One that researchers must present when they compete at pony club events

31. The standard error is a statistical measure of:
A. The normal distribution of scores around the sample mean
B. The extent to which a sample mean is likely to differ from the population mean
C. The clustering of scores at each end of a survey scale
D. The degree to which a sample has been accurately stratified

32. Cohen's kappa is a measure of:
A. Inter-surveyor consistency
B. Intra-observer validity
C. Intra-coder validity
D. Inter-observer consistency

33. The ability of the test to call it negative in those who do not have the disease is known as:
A. sensitivity
B. validity
C. specificity
D. Reliability

34. What is the role of the moderator in a focus group?
A. To stimulate discussion and keep the conversation on track
B. To ask leading questions and dominate the discussion
C. To sit away from the group and observe their behaviour
D. To evaluate the group's performance on a particular task

35. COVID-19 stands for:
A. Corona Virus Induced Disease - 2019
B. Corona Virus Infectious Disease - 2019
C. Corona Virus Influenza Disease - 2019
D. Corona Virus Inflammatory Disease - 2019

PART –B

36. Which of the following is matched incorrectly?
A. Microfilaments: actin, myosin
B. Intermediate filaments: vimentin, keratin
C. Microtubules: clathrin
D. Cytoskeleton: spectrin, Ankyrin

37. The mitotic spindle is made up of a protein called:
A. tubulin
B. caveolin
C. connexin
D. annexin

38. Which of the following is an example of primary active transport?
A. Ca extrusion from cells by the Na-Ca exchanger
B. Glucose entry into cells through glucose transporter 2 (GLUT-2)
C. Glucose uptake into intestinal epithelial cells by Na-glucose cotransporter 1 (SGLT-1)
D. Ca sequestration in sarcoplasmic reticulum by Ca-ATPase

39. Which subunit of G proteins has intrinsic GTPase activity?
A. Alpha
B. Beta
C. Gamma
D. Delta

40. Which toxin inhibits the function of Gi ?
A. Cholera toxin
B. Pertussis toxin
C. Forskolin
D. Saxitoxin

41. Which one of the following is an active form of vitamin D?
A. 7-dehydrocholesterol
B. Cholecalciferol
C. 25-hydroxycholecalciferol
D. 1,25-dihydrocholeclciferol

42. Which one of the following hormones uses tyrosine kinase mechanism for its action?
A. LH
B. Insulin
C. TRH
D. Oxytocin

43. Which amongst the following is a property of Insulin?
A. Inhibits glycogenolysis in the liver
B. Inhibits deposition of fats in adipose tissue
C. Activates the hormone sensitive lipase
D. Maximum insulin response occurs at 175mg/dl

44. The second messenger for phospholipase C mechanism is:
A. Gq protein
B. PIP2
C. IP3 / Ca+2
D. cAMP

45. HIV is an example of
A. Retro virus
B. Adeno virus
C. Herpes simplex virus
D. A mutant bacteria

46. Cell volume and pressure is mainly dependent upon activity of:
A. Na glucose cotransporter
B. Na-K pump
C. Glucose transporter
D. Na-Ca exchanger

47. Normally, the main function of the colon is absorption of:
A. Na, Cl and H_2O
B. Triacylglycerols
C. Secondary bile acids
D. Iron

48. Which of the following hormone is normally released by the stomach into the systemic circulation?
A. Ghrelin
B. Gastrin
C. Pepsinogen
D. Secretin

49. When a serum sample is electrophoresed, which of the following bands is normally absent?
A. Albumin
B. α_1 globulin
C. α_2 globulin
D. Fibrinogen

50. Antisense therapy is an example of
A. gene therapy
B. genetically-mediated therapy
C. gene targeting
D. preventive gene therapy

51. X ray was discovered by
A. Wilhelm Conrad Roentgen in 1895
B. Madame Curie in 1895
C. Wilhelm Conrad Roentgen in 1900
D. Nicola Tesla in 1910

52. Which is a mismatch in the following?

A. PCR	Kary B Mullis
B. Penicillin	Alexandar Flemming
C. Polio Vaccine	Jonas Salk
D. Rabies	Edward Jenner

53. With regard to Granulation tissue, the following is true
A. a specific exuberant reaction to a pathogen
B. nonspecific inflammatory response with vessels, myofibroblasts
C. always requires a pathogen as a triggering factor
D. rare response and a sign of poor prognosis

54. The stem cells are defined as :
A. Undifferentiated rapidly dividing cells with capacity to differentiate
B. Undifferentiated cells capable of differentiation and proliferation
C. Partly differentiated cells capable of differentiation and proliferation
D. Undifferentiated cells capable of self renewal and differentiation

55. Niche for stem cells is defined as
A. Is a passive and protective microenvironment of stem cells
B. In-vivo microenvironment where stem cells reside and receive stimuli that determine their fate.
C. Required for cell division of stem cells
D. Niche takes over the function of stem cells when they die

56. The corpus callosum is a
A. source of hypothalamic hormones
B. neural pathway that connects the right and left hemispheres
C. part of the neocortex
D. structure in the cerebellum

57. With regard to congenital TORCH syndrome refers to:
A. Toxoplasma, Onchocerciasis, Rubella, Cytomegalovirus, Herpes Simplex
B. Toxoplasma, Other infections (herpes zoster, Zika, syphilis, etc) Rubella, Cytomegalovirus, Herpes Simplex
C. Toxoplasma, Rubella, Cytomegalovirus, Herpes Zoster
D. Toxoplasma, Rubella, Chlymadia, Herpes Simplex

58. In general, afferent nerves carry sensory information
A. to the central nervous system
B. to the peripheral nervous system
C. from the central nervous system
D. from the cortex

59. Polymerase chain reaction is used to detect:
a. DNA in the test sample
b. Requires TAQ enzyme and primer
c. Requires GMP facility
d. DNA RNA and Protein in the test sample

e. DNA dimers in the sample

Pick the most appropriate sentence in the following:
A. a and c are correct
B. a and b are correct
C. a and b are correct
D. a, b and c are correct

60. Hidden Hunger refers to
A. When patient hides and ignores his hunger
B. When the doctor misses the diagnosis of hunger
C. When the micronutrients are missing in the diet
D. When the patient is highly selective about the diet

61. Which is not a chromosomal disease:
A. Downs Syndrome
B. Philadelphia Chromosome
C. Turner Syndrome
D. Sickle Cell Anemia

62. The number of structural genes present in the *lac* operon are :
A. One
B. Three
C. Six
D. Eight

63. In the absence of ADH(Anti-diuretic hormone) water is reabsorbed in the kidney
A. By late distal, cortical and medullary collecting tubules
B. Mostly by proximal tubules and part of Loop of Henle
C. By facultative water transport
D. By active transport system

64. Resting membrane potential in the nerve cells is maintained by
A. K-leaky channels
B. K-voltage-gated channels
C. Na- leaky channels
D. Na-voltage-gated channels

65. Higher carbon dioxide concentrations in the tissues
A. Shifts oxy-hemoglobin dissociation curve towards left
B. Facilitates increased delivery of oxygen to tissues
C. Shifts the oxy-hemoglobin dissociation curve upward
D. Leads to decreased delivery of oxygen to tissues

66. Urinary excretion rate is equal to
A. Filtration rate + Reabsorption rate – Secretion rate
B. Filtration rate – Reabsorption rate + Secretion rate
C. Filtration rate + Reabsorption rate + Secretion rate
D. Filtration rate – Reabsorption rate – Secretion rate

67. Drs James P Allison and Tasuku Honjo won 2018 Noble prize in Physiology or Medicine for their discoveries regarding
A. Cancer therapy
B. Autophagy
C. Prions
D. Circadian rhythm

68. Lysosomes were discovered by
A. David Altmann
B. Keith Porter
C. Johannes Rhoden
D. Christian de Duve

69. The number of RBC in the blood of a person living at higher altitudes compared to a person living in Plains will be:
A. Higher than that of person living in plains
B. Lower than that of person living in plains
C. It will be same
D. There is no relationship between the levels of RBC and high altitudes

70. Which one of the following will not cause acquired immunity?
A. Oral BSA administration
B. Subcutaneous BSA administration
C. Intravenous BSA administration
D. Intraperitoneal BSA administration

University of Hyderabad
Ph.D. Entrance Examinations - 2022

School/Department/Centre : School of Medical Sciences
Course : Ph.D. Subject : Biomedical Sciences

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	C	26	D	51	A
2	B	27	C	52	D
3	B	28	B	53	B
4	D	29	D	54	D
5	A	30	C	55	B
6	D	31	B	56	B
7	C	32	D	57	B
8	A	33	C	58	A
9	A	34	A	59	B
10	C	35	B	60	C
11	A	36	C	61	D
12	D	37	A	62	B
13	C	38	D	63	B
14	D	39	A	64	A
15	D	40	B	65	B
16	C	41	D	66	B
17	B	42	B	67	A
18	B	43	A	68	D
19	B	44	C	69	A
20	A	45	A	70	A
21	C	46	B		
22	D	47	A		
23	D	48	A		
24	A	49	D		
25	B	50	B		

Note/Remarks :

Signature 21/11
School/Department/Centre