C - 39

Entrance Examinations – 2023
Ph.D. Health Sciences (Public Health)

Duration : 2 hours Max. Marks : 70

Hall Ticket No.

Read the following instructions carefully before answering the questions :

Instructions

1. Write your Hall Ticket No. in the OMR Answer Sheet given to you. Also, write your Hall Ticket No. in the space provided above.

2. This Question paper consists of two parts : **Part – A** and **Part – B** with 35 Questions in each **Part.** OMR Answer sheet will be provided separately.

3. Each question carries **One mark** and there is **no negative marking.**

4. Answers are to be marked on the OMR Answer Sheet following the instructions provided thereon.

5. Please handover the **OMR Answer Sheet** at the end of the examination to the Invigilator. You may take the Question Paper after the examinations is over.

6. No additional sheet will be provided. Rough work can be done in the Question paper itself.

7. The question paper contains thirteen (13) pages including this page.

C-39

ENTRANCE EXAMINATIONS - 2023

(Ph.D. Admissions June 2023)

PhD Health Sciences (Public Health)

Part A (Research Methodology)

1. The probability of having disease when the screening test is positive is called:
   A. Sensitivity
   B. Specificity
   C. Positive Predictive Value
   D. Negative Predictive Value

2. A review of the evidence on a clearly formulated question that uses valid and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyze data from the studies that are included in the review is called:
   A. Annotated Bibliography
   B. Evidence Gap Analysis
   C. Systematic Reviews
   D. Metanalysis

3. 95% Confidence Intervals looks at an estimate which is a:
   A. Point estimate with a fixed probability
   B. Varied estimate with a varying probability
   C. Point estimate but varying probability
   D. Valid estimate with no probability

4. The meaning of a gold standard test is:
   A. The diagnostic test or benchmark that is the best available under reasonable conditions.
   B. The accepted standard decided by experts.
   C. Cannot be changed in any circumstances
   D. The diagnostic test or benchmark that is established under controlled conditions only.

5. Implementation research uses:
   A. Quantitative methods
   B. Qualitative Methods
   C. Multi-modal Methods
   D. Exploratory Methods

6. All of the following are ethical principles except?
   A. Justice
   B. Self-respect
   C. Beneficence
   D. Privacy

7. A doctor is required to study the incidence of silicosis in a stone cutting industry, which study design should he choose:
   A. Longitudinal
   B. Cross-sectional
   C. Ecological surveys
   D. Case reports

8. Smoking leads to oesophageal carcinoma. Coffee intake has its effect on smoking and also oesophageal carcinoma. This factor can distort the results of the study which intends to prove an association between smoking and oesophageal cancer. This effect of this factor is known as:
   A. Confounding
   B. Multiple causation
   C. One to one relationship
   D. Dose response relation

9. The proportion of the disease in a population that would be eliminated if the risk factor is eliminated is determined by:
   A. Relative risk
   B. Absolute risk
   C. Attributable fraction
   D. Odds ratio

10. While investigating a point source epidemic it was found that 120 students ate five different foods (meat burgers, fried fish, steak, and rice and fruit salad. The relative risk was calculated for all those five foods. It was concluded that fish was not responsible for this epidemic. The relative risk of fish is:
    A. 0.7
    B. 1.2
    C. 1.7
    D. 3.0

11. All of the following are systematic techniques except
    A. Social Mapping
    B. Free Listing
    C. Pile sorting
    D. Rating scales

12. The technique used to visually identify and analyze two sets of opposing forces affecting a problem situation so as to plan a positive change is.
    A. Trend analysis
    B. Social Mapping
    C. Force Field analysis
    D. Spider diagram

13. What is one of the main disadvantages of using the covert role in ethnography?
    A. It can be hard to gain access to the social group
    B. The problem of reactivity: people may change their behaviour if they know they are being observed
    C. It is usually too time consuming and expensive to be a realistic option
    D. It is difficult to take notes without arousing suspicion.

14. What is meant by the term "reactive effect"?
    A. Research subjects may have a bad reaction to the drugs they are given
    B. If people know they are being observed, they may change their behaviour
    C. Researchers sometimes react to their informants' behaviour with horror
    D. The categories on an observation schedule may not be mutually exclusive

15. What is meant by the term "theoretical saturation"?
    A. Deciding on a theory and then testing it repeatedly
    B. The problem of having used too many theories in one's data analysis
    C. A state of frustration caused by having used every possible statistical test without finding any significant results
    D. The point at which a concept is so well developed that no further data collection is necessary

16. In qualitative research, sampling that involves selecting diverse cases is referred to as:
    A. Typical-case sampling
    B. Critical-case sampling
    C. Intensity sampling
    D. Maximum variation sampling

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

18. People belonging to the armed forces and police force are usually subjected to:
    A. Screening
    B. Case Finding
    C. Periodic Health Examination
    D. Opportunistic screening

19. A _____ in analytical chemistry or biomedicine is a method of data plotting used in analyzing the agreement between two different assays.
    A. Kaplan Meir Analysis
    B. Bland Altman Plot
    C. Cox Proportional Hazards Model
    D. Spearman's correlation

20. Which one among the following is a parametric test?
    A. z-test
    B. Sign Test
    C. Run Test for Randomness
    D. Kruskal-Willis Test

21. The scatter plot is used to display
    A. Causality
    B. Power
    C. Correlation
    D. Type II error

22. The type of research design proposes present to the future is known as?
    A. Cross sectional design
    B. Retrospective design
    C. Prospective design
    D. Longitudinal design

23. Graphical representation of data where a curve is obtained by joining the midpoints of the top of the rectangles in a histogram by a straight line is called as?
    A. Frequency polygon
    B. Bar diagram
    C. Ogive
    D. Line diagram

24. Which among the following most commonly associated with a lack of informed consent?
    A. In-depth interviewing
    B. Covert observation
    C. Structured interviewing
    D. Qualitative content analysis

25. Giving vitamin B12 to patients with vitamin B12 deficiency can improve strength, but little is known about any influence it may have on the ordinary weakness of aging. We selected 40 men 70 years of age and greater from a Diabetic treatment clinic and randomly assigned them to receive either vitamin 12 or identical placebo. Muscle strength of the quadriceps, measured with an isokinetic dynamometer after 6 months of treatment, was similar in the two groups. What type sturdy design is this.
    A. Case control study
    B. Cohort study
    C. Case series study
    D. Interventional study

26. Consider the following general research questions for a case control study. What is the relationship between depression and obesity among college students? Following is the appropriate specific refined research question for the above general vague research question.
    A. Are obese are more likely than non-obese among college students to have depression?
    B. Is obesity associated with depression?
    C. What is the prevalence of depression among college students?
    D. What is the incidence of depression among the obese college students?

27. The research question is, "What is the prevalence of alcohol and drug use among persons who attend rock concerts?" investigator anticipated that few women would attend the concert. As each patron entered the theatre, she is asked to throw a die. Men who throw an odd number and women who throw an even number are selected. following is the sampling scheme for selecting individuals to fill out a brief questionnaire.
    A. Simple random sampling
    B. Stratified random sampling.
    C. Systematic random sampling
    D. convenient sampling

28. Classify the following variables as nominal, ordinal, continuous, and ordered discrete.
    A. Body weight (obese/not obese), Depression (none, mild, moderate, severe), Age, Education (highest year of schooling)
    B. Education (highest year of schooling), Depression (none, mild, moderate, severe), Body weight (obese/not obese), Age,
    C. Body weight (obese/not obese), Depression (none, mild, moderate, severe), Education (highest year of schooling), Age
    D. Education (highest year of schooling), Depression (none, mild, moderate, severe), Age, Body weight (obese/not obese)

29. The research question is, "Does body weight at age 1 year predict the number of drop-in clinic visits during the following year?" The investigator plans a prospective cohort study, measuring body weight using an infant scale. A problems noted during pretesting.is that the scale seems to give variable results; weighing the 10-pound reference weight 20 times gives a mean of 10.01 ± 1.00 (standard deviation) pounds. Is this a problem due to lack of
    A. Accuracy
    B. Precision
    C. A& B
    D. None of the above

30. Which of the following is likely to be an example of a Type II error?
    A. A randomized trial finds that subjects treated with a new analgesic medication. had greater mean declines in their pain scores during a study than did those treated with placebo (P = 0.03).
    B. A 10-year study reports that 110 subjects who smoke do not have a greater incidence of lung cancer than 294 non-smokers (P = 0.31).
    C. A&B

D. None of the above

31. What is the "ecological fallacy"?
    A. The assumption that secondary data analysis can be carried out at home.
    B. The mistake of observing people in their natural setting
    C. The error of making inferences about individual behaviour from aggregate data
    D. The myth that it is easy to research environmentalist action group.

32. A deductive theory is one that:
    A. Allows theory to emerge out of the data.
    B. Involves testing an explicitly defined hypothesis.
    C. Allows for findings to feed back into the stock of knowledge.
    D. Uses qualitative methods whenever possible.

33. A systematic literature review is:
    A. which starts in your own library, then goes to on-line databases and, finally, to the internet.
    B. A replicable, scientific, and transparent process
    C. One which gives equal attention to the principal contributors to the area.
    D. A responsible, professional process of time-management for research

34. Type-II error is
    A. Accepting false null hypothesis
    B. Rejecting true null hypothesis
    C. Rejecting false null hypothesis
    D. Accepting true null hypothesis

35. For a positively skewed curve which measure of central tendency is largest
    A. Mode
    B. Mean
    C. Median
    D. All are equal

Part B (Public Health)

36. The cost incurred when investing in competing priorities is called:
    A. Recurrent Cost
    B. Variable Cost
    C. Incremental Cost
    D. Opportunity Cost.

37. The methods that use outcomes framework for Program Planning and Management is called:
    A. Theory of Change method
    B. Log Frame Analysis method
    C. Program Evaluation Review Technique
    D. Critical Path Method

38. A method of adjusting for present value of time in economic analysis is called:
    A. Compound interest method.
    B. Uncertainty Analysis
    C. Discounting
    D. Sensitivity Analysis

39. Health Economics is a form of:
    A. Normative Economics
    B. Allocative Economics
    C. Market Economics.
    D. Productive Economics

40. Policy Triangle includes all except:
    A. Context
    B. Actors
    C. Content
    D. Procedure

41. ICER in Health Economics means:
    A. Incremental Cost Effectiveness Ratio
    B. The difference between one set of costs and consequences
    C. Partial Economic Evaluation
    D. Cost vs Benefit Analysis

42. A problem in a problem analysis under health project management is all except:
    A. Always an absence of a solution
    B. Not an absence of solution
    C. Negative state
    D. Has a cause-and-effect relationship

43. What proportion of energy should come from fat consumption in children
    A. 55-75
    B. 45-50
    C. 30-40
    D. 15-20

44. The occupational disease due to dust exposure causes all except
    A. Pneumoconiosis
    B. Bysinosis
    C. Baggasosis
    D. Tuberculosis

45. Modern contraceptive methods are used to prevent unwanted pregnancy. An ideal temporary contraceptive should not be
    A. User friendly
    B. Easily available
    C. Effective
    D. Irreversible

46. The phenomenon of bimodality where two separate peaks instead of one in the age incidence curve of a disease is seen in all except
    A. Hodgkin's disease
    B. Leukemia
    C. Female breast cancer
    D. Cervical cancer

47. The amount of previously unrecognised disease that is diagnosed as a result of screening effort is called
    A. Tip of the iceberg phenomenon
    B. Yield
    C. True positive cases
    D. False negative cases

48. If the age incidences curve of leukemia shows two peaks it is suggestive of bimodality. Bimodality usually signifies:
    A. Non homogeneity
    B. Large number of observations
    C. Accuracy
    D. Short duration of disease

49. In the mid nineteenth century, an epidemiologist suggested that cholera was caused by drinking water in which an invisible agent is present. This type of association gives:
    A. Specificity
    B. Temporal sequence
    C. Biological plausibility
    D. Consistency

50. When a new treatment is developed that delays deaths but does not produce recovery from a chronic disease, which of the following will occur.
    A. Prevalence of the disease will decrease
    B. Incidence of the disease will increase
    C. Prevalence of the disease will increase
    D. Incidence of the disease will decrease

51. Prophylactic administration of vitamin K in breast fed babies is an example of:
    A. Health Promotion
    B. Treatment
    C. Specific protection
    D. Rehabilitation

52. Bhopal gas tragedy is an example of:
    A. Slow epidemic
    B. Continuous epidemic
    C. Point source epidemic
    D. An accident which did not warrant an emergency

53. If a greater proportion of monozygotic twin pairs are found to be concordant for a certain disease than are dizygotic twin pairs, the observation suggests that the disease is most likely caused by:
    A. Exclusively hereditary factors
    B. Hereditary factors almost exclusively, with some nonhereditary factors possibly playing a role
    C. Exclusively environmental factors
    D. Environmental and genetic factors almost equally

54. Criteria for prioritizing health problems for surveillance include all the following, except?
    A. Incidence of the problem.
    B. Public concern about the problem.
    C. Number of previous studies of the problem.
    D. Social and economic impact of the problem.

55. John Snow's investigation of cholera is considered a model for epidemiologic field investigations because it included all except:
    A. Biologically plausible hypothesis
    B. Comparison of a health outcome among exposed and unexposed groups
    C. Spot map
    D. Multivariate statistical model

56. The extent to which a specific health care treatment, service, procedure, program, or other intervention produces a beneficial result under ideal controlled conditions is its:
    A. Efficacy
    B. Effectiveness
    C. Effect modification
    D. Efficiency

57. Which of the following is not a possible outcome measure that could be used as an indicator of the benefit of screening programs aimed at early detection of disease?
    A. Reduction of case-fatality in screened individuals
    B. Reduction of incidence in the population screened
    C. Improvement in the quality of life in screened individuals
    D. Reduction of mortality in the population screened

58. One of the following is not the major criteria for diagnosing Rheumatic fever:
    A. Fever
    B. Polyarthritis
    C. Carditis
    D. Subcutaneous nodules

59. A subject weighing 60 kg is exercising by Running at a speed of 12 km/h. He ran 6 km in 30 min (MET level 12.5). Calculate the amount of energy in Kcal expended by the person.
    A. 250
    B. 375
    C. 450
    D. 175

60. Not a Coronary Risk Factor :
    A. Raised Non-HDL Cholesterol
    B. Raised TC : HDL-C ratio (> 4.5)
    C. Low Apolipoprotein A-1
    D. Low Apolipoprotein B

61. As per the American Diabetic association (ADA), a person is said to be diabetic when the HbA1c is more than or equal to (in %)
    A. 7.5
    B. 5.7
    C. 6.5
    D. 5

62. The following Diet is a not a risk factor for Hypertension
    A. Rich in Sodium salts
    B. Rich in saturated fats
    C. Low in Dietary fiber
    D. High in potassium.

63. If you are studying the rate of breast cancer, which of the following events would affect a participant's person-time? Except
    A. Participant decides to no longer participate in the study.
    B. Death
    C. Loss to follow-up
    D. Diagnosis with uterine cancer

64. A study on diabetes begins with one thousand 40 to 45-year-old men of which 60 are already diabetic. The remaining 940 men are followed for 5 years during which time 75 men develop diabetes. Calculate the prevalence of diabetes per100 at the start of the study.
    A. 6
    B. 13.5
    C. 7.5
    D. 7.97

65. What would be the effect on age-specific incidence rates of uterine cancer if, women with hysterectomies were included in the denominator of the calculations, assuming that there are some women in each age group who have had hysterectomies?
    A. The rates would remain the same.
    B. The rates would tend to decrease.
    C. The rates would increase in older groups and decrease in younger groups.
    D. It cannot be determined whether the rates would increase or decrease.

66. Please select which of the following applies to case-control studies. Please select one answer.
    A. In case-control studies the number of cases must be equal to the number of controls.
    B. Case-control studies can be used to estimate the incidence of a disease.
    C. In case control studies odds ratio cannot be calculated
    D. In case-control studies, controls should be representative of the population at risk.

67. Which of the following can introduce information bias in a case control study? Except
    A. Differential recall about exposure by the cases
    B. Collecting data differently from the exposed and unexposed
    C. Systematic distortion of the truth by the study participants
    D. Inclusion of controls not representative of the target population

68. A study investigating the effect of exposure to sunlight and the development of melanoma found a relative risk of 2. Which of the following is the correct interpretation of this finding? Please select one answer.
    A. 2 cases of melanoma among those exposed to sunlight can be attributed to the exposure to sunlight and therefore could be prevented by eliminating the exposure.
    B. Individuals exposed to sunlight had 2 times the risk of developing melanoma compared to individuals not exposed to sunlight over the study period.
    C. There were two more cases of melanoma in those exposed to sunlight compared to those unexposed over the study period.
    D. The absolute risk is 2.

69. If the Hemoccult test result is negative, no further testing is done. If the Hemoccult test result is positive, the individual will have a second stool sample tested with the Hemoccult II test. If this second sample also tests positive for blood, the individual will be referred for more extensive evaluation. What is the effect on net sensitivity and net specificity of this method of screening?
    A. Net sensitivity and net specificity are both increased.
    B. Net sensitivity is decreased, and net specificity is increased.
    C. Net sensitivity remains the same and net specificity is increased.
    D. Net sensitivity is increased, and net specificity is decreased.

70. Which form of pathogen is used in vaccination?
    A. Inactivated and weakened pathogenic antigens
    B. Activated and strong pathogenic antigens
    C. Hyperactive and strong pathogen
    D. Preformed antibodies.

University of Hyderabad
Ph.D. Entrance Examinations - 2023

School/Department/Centre: School of Medical Sciences
Course : Ph.D. – Health Sciences Subject : Public Health

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

Note/Remarks: NO NEGATIVE MARKS

Signature
School/Department/Centre MEDICAL SCIENCES 27/6/23