ENTRANCE EXAMINATIONS – 2020

(Ph.D. Admissions - January 2021 Session)

Ph.D. Health Sciences (Public Health)

Hall Ticket Number:

Time: 2 hours Total Marks: 70 (Part I - 35 marks + Part II - 35 marks)

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ANSWERING

INSTRUCTIONS

1. This booklet has TWELVE (12) pages. Please check thoroughly for all the pages.

2. Enter the Hall Ticket number on the first page of this booklet as well as well as on the OMR sheet.

3. There are Two (2) PARTS in the question paper – PART I (Question numbers 1- 35) and PART II (Question numbers 36 -70). In case of a tie, marks obtained in PART I will be considered for resolving the tie.

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

5. All answers have to be answered only in the OMR sheet following the instructions provided thereupon.

6. Scientific calculators are not permitted.

PART I

1. The population Census that will be carried out by the Government of India this current year is an example of
A. Exploratory Research
B. Causal Research
C. Descriptive Research
D. None of the Above

2. The result of a statistical test, denoted p, shall be interpreted as follows:
A. the null hypothesis H0 is rejected if $p < 0.05$
B. the null hypothesis H0 is rejected if $p > 0.05$
C. the alternate hypothesis H1 is accepted if $p > 0.05$
D. the null hypothesis H0 is accepted if $p < 0.05$

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

4. The appropriate method of displaying the changes that occur in disease frequency over time
A. Line chart
B. Bar chart
C. Histogram
D. Stem and leaf

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

6. Percentiles divides the data into _____ equal parts
A. 25
B. 100
C. 50
D. 10

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

8. In a small sample survey on 7 male and 10 female students, the mean cholesterol levels were found to be 250 mg percent and 260 mg percent respectively. Which one of the following statistical tests is appropriate to find significance of the difference in this case
A. Chi-square test

B. Unpaired 't' test

C. Paired 't' test

D. Z test

9. Sample size determinations depends upon all except
A. Type I error
B. Test statistic value
C. Power
D. Expected parameter value

10. All is true about simple random sample sampling except
A. Impractical if N is very large
B. Minority subgroups are adequately represented
C. Every member has an equal chance of being included
D. Population estimate is easy to calculate

11. The levels of nicotine in 6 cigarettes were 13.0, 11.8, 15.4, 17.4, 31.2 and 24.3 mg. The mean of these values in the study is
A. 14.9
B. 15.9
C. 18.8
D. 17.4

12. Which of the following is characteristic of Qualitative research?
A. Predict causal relationships
B. Are objective
C. Measure level of confidence
D. Describe individual experiences

13. A perspective of research that involves studying a phenomenon as an insider involved in the phenomenon under study is termed as:
A. An etic perspective
B. An emic perspective
C. A subjective perspective
D. An objective perspective

14. 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. Social Mapping
B. Trend analysis
C. Force Field analysis
D. Spider diagram

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15. Who is a key informant?
A. A group member who helps the ethnographer gain access to relevant people/events
B. A senior level member of the organization who refuses to allow researchers into it
C. A participant who appears to be helpful but then blows the researcher's cover
D. Someone who cuts keys to help the ethnographer gain access to a building

16. What is the difference between "scratch notes" and "full field notes"
A. Scratch notes are just key words and phrases, rather than lengthy descriptions
B. Full field notes are quicker and easier to write than scratch notes
C. Scratch notes are written at the end of the day rather than during key events
D. Full field notes do not involve the researcher scratching their head while thinking

17. 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 behavior
C. Researchers sometimes react to their informants' behavior with horror
D. The categories on an observation schedule may not be mutually exclusive

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

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

20. A randomized trial comparing the efficacy of two drugs showed a difference between the two (with a P value < 0.05). Assume that, in reality, however, the two drugs do not differ. This is therefore an example of:
A. Type I error (α error)
B. Type II error (β error)
C. $1 - \alpha$
D. $1 - \beta$

21. A researcher is committing a Type 1 (Alpha error – α error) when:
A. When null hypothesis is rejected when it is actually true
B. When null hypothesis is accepted when it is actually false
C. Both the null and alternate hypothesis is rejected
D. None of the above

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22. Action Research means:
A. Quantitative Research
B. Qualitative Research
C. Mixed methods of Research
D. Applied Research

23. The correlational research helps in all except:
A. Looking at association
B. Looking at causation
C. Looking at prediction
D. Looking at differentiation

24. Which one of these characteristics would you expect not to give high test-retest reliability?
A. Intelligence
B. Religious beliefs
C. Attention
D. Dyslexia

25. If a lecturer wanted to replace your current examinations on research methods with this multiple choice test, the lecturer could correlate your multiple choice scores with your marks from the written exam also attempted by you today. If the two sets of scores correlated well the lecturer could be fairly confident that this multiple choice test had good what?
A. Content validity
B. Face Validity
C. Predictive Validity
D. Concurrent Validity

26. Using different methods of collecting data, different sources of evidence, different tests and in some cases different interviewers, is known as what?
A. Repeatability
B. Triangulation
C. Reliability
D. Consistency

27. Why should tests used in clinical settings have higher levels of reliability and validity than those used in research studies?
A. To have good reliability and validity
B. Because they are used to assess individuals
C. Because they are down on selected small samples
D. Efficiency and Effectiveness are same and important in clinical settings

28. Which of the following would NOT represent an interaction in a graph?
A. Where the lines diverge
B. Where the lines converge
C. Where the lines are parallel
D. Where the lines intersect

29. The difference between the mean of a researcher's sample and the mean of the population of the sample is known as the:
A. Sampling Error
B. Confidence Interval
C. Standard Deviation
D. Regression to Mean

30. The stages of malignant disease is recorded using the symbols 0, I, II, III, IV. We say that the scale used is?
A. Dependent
B. Nominal
C. Ratio
D. Ordinal

31. Which of the following best describes a study done in a laboratory setting using animals?
A. Translational research
B. Bench-based research
C. Theoretical research
D. Preventive research

32. Which of the following statements is NOT correct regarding errors in a health research?
A. Random error is due to chance
B. Systematic error is due to bias
C. Random errors can be eliminated by improving study design
D. Bias distorts the study results in one direction

33. Which of the following characteristics best describe a good research question?
A. Feasible, Novel, Ethical
B. Feasible, Noble, Ethical
C. Ethical, Novel, Intuitive
D. Fantastic, Novel, Relevant

34. Which of the following Boolean operator will give the highest number of results when used between two given search terms?
A. AND
B. NOT
C. OR
D. ALL

35. Medical Subject Headings is a controlled vocabulary thesaurus used for indexing articles in
A. PubMed
B. Google scholar
C. Scopus
D. Health on Net

PART II

36. Which of the following is characteristic of a single-exposure, common-vehicle outbreak?
A. Frequent secondary cases
B. Increasing severity with increasing age
C. Explosive
D. Cases include both people who have been exposed and those who were not exposed

37. A survey was conducted among the non-hospitalized adult population of the United States during 2008 through 2011. The results from this survey are shown below:

Age Group	Persons with Hypertension (%)
18–29 years	4
30–39 years	10
40–49 years	22
50–59 years	43
60–69 years	54
70 and older	64

The researchers stated that there was an age-related increase in the risk of hypertension in this population. You conclude that the researchers' interpretation:

A. Is correct
B. Is incorrect because it was not based on rates
C. Is incorrect because incidence rates do not describe risk
D. Is incorrect because prevalence is used

38. Population of the city of Atlantis on March 30, 2012 = 183,000
No. of new active cases of TB occurring between January 1 and June 30, 2012 = 26
No. of active TB cases according to the city register on June 30, 2012 = 264
The incidence rate of active cases of TB for the 6-month period was
A. 7 per 100,000 population
B. 14 per 100,000 population
C. 26 per 100,000 population
D. 28 per 100,000 population

39. The incidence rate of a disease is five times greater in women than in men, but the prevalence rates show no sex difference. The best explanation is that:
A. The crude all-cause mortality rate is greater in women
B. The case-fatality from this disease is greater in women
C. The case-fatality from this disease is lower in women
D. The duration of this disease is shorter in men

40. Based on the following information, it was concluded that workers in industry B are at higher risk of death from respiratory system cancer than workers in industry A. (Assume that the age distributions of the workers in the two industries are nearly identical).

| | INDUSTRY A | | INDUSTRY B | |
| | No. of Deaths | % of All Cancer Deaths | No. of Deaths | % of All Cancer Deaths |
Cancer Site				
Respiratory system	180	33	248	45
Digestive system	160	29	160	29
Genitourinary	80	15	82	15
All other sites	130	23	60	11
Totals	550	100	550	100

Table title: **Annual Cancer Deaths in White Male Workers in Two Industries**

Which of the following statements is true?

A. The conclusion reached is correct

B. The conclusion reached may be incorrect because proportionate mortality rates were used when age-specific mortality rates were needed

C. The conclusion reached may be incorrect because there was no comparison group

D. The conclusion reached may be incorrect because proportionate mortality was used when cause-specific mortality rates were needed

41. This Question is based on the following information:
A screening test is used in the same way in two similar populations, but the proportion of false positive results among those who test positive in population A is lower than that among those who test positive in population B
A. What is the likely explanation for this finding?

B. It is impossible to determine what caused the difference

C. The specificity of the test is lower in population A

D. The prevalence of disease is lower in population A

The prevalence of disease is higher in population A

42. A diagnostic test has been introduced that will detect a certain disease 1 year earlier than it is usually detected. Which of the following is most likely to happen to the disease within the 10 years after the test is introduced? (Assume that early detection has no effect on the natural history of the disease. Also assume that no changes in death certification practices occur during the 10 years)

A. The period prevalence rate will decrease

B. The apparent 5-year survival will increase

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C. The age-adjusted mortality rate will decrease

D. The age-adjusted mortality rate will increase

43. Why would you choose to measure disability using a clinical assessment rather than self-report?

A. If you wanted to understand the level of functioning of an individual

B. If you wanted to know the health and rehabilitation needs in a population

C. If you wanted to investigate how people with disabilities participate in society

D. If you wanted to verify whether the individual is making false claim

44. A case-control study is characterized by all of the following except:

A. It is relatively inexpensive compared with most other epidemiologic study designs

B. Patients with the disease (cases) are compared with persons without the disease (controls)

C. Incidence rates may be computed directly

D. Assessment of past exposure may be biased

45. Which of these is the best description of a person with disabilities, according to the ICF model of disability?

A. Someone who cannot go to school, because the school does not have a ramp

B. Someone with a visual, hearing, physical or intellectual impairment

C. Someone with an impairment who has difficulties participating fully because of either personal or environmental factors

D. Someone who goes to work despite of physical or intellectual impairment

46. Doctor refuses to treat a person with schizophrenia because he doesn't like his behaviour. What is the type of access barrier in this example?

A. Informational

B. Attitudinal

C. Physical

D. Communication

47. Causes of poor health may vary for people with different types of impairment. For the following reasons provided why people with disabilities may have higher risk of poor health, select the specific type of impairment/health condition. Pressure sores and respiratory disease may result from lack of movement:

A. Person with mental health condition

B. Person with spinal cord injury

C. Person with communication impairment

D. Person with visual impairment

48. The National Health Policy in India were proposed in all the years except:

A. 1946

B. 1983

C. 2002

D. 2017

49. Health Policy Development Model includes all except:
A. Context
B. Process
C. Actions
D. Content

50. NRHM in our country is correctly identified as a:
A. Portfolio
B. Program
C. Project
D. Policy

51. The Mudaliar committee is also called as:
A. Health Survey and Planning Committee
B. Health Survey and Development Committee
C. Health Manpower and Planning Committee
D. Health Services and Development Committee

52. Opportunity cost principle is applied to:
A. Allocation of resources to preventive programs
B. Allocation of resources to curative programs
C. Allocation irrespective of type of health programs
D. Expending Resources to produce a unit output

53. Efficacy in Epidemiology and Health Economic Terminology is:
A. Doing things in real life situations
B. Doing things in highly controlled situations
C. Doing things in real life situations
D. Doing things in field situations

54. Ayushman Bharat – PMJAY is all of the following except:
A. World's Largest Health Financing Welfare scheme
B. Health Insurance Program
C. Health Assurance Program
D. Scheme to increase the Life Expectancy of Indian population

55. Intangible costs are concerned with all except:
A. Stress
B. Fear
C. Anxiety
D. Care

56. The ICER stands for:
A. Incremental cost effectiveness ratio
B. Internal cost efficiency rate
C. Institutional cost evaluation record
D. Internal cost equity rate

57. CBR matrix includes all these components except:
A. Health
B. Economics
C. Empowerment
D. Livelihoods

58. An expert in the field of public health is required to estimate the magnitude of a health problem. Which rate would he calculate for this?
A. Incidence
B. Prevalence
C. Either A or B
D. None of the above

59. An outbreak of brucellosis in cattle is reported, threatening the health of human population. This outbreak is:
A. Epizootic
B. Epornithic
C. Enzootic
D. Exotic

60. Prophylactic administration of Vitamin K in breastfed babies is an example of:
A. Health promotion
B. Treatment
C. Specific protection
D. Rehabilitation

61. Sarcoma is cancer of:
A. Epithelial tissue
B. Mesodermal tissue
C. Blood
D. Endodermal tissues

62. Who separated medicine from religion, superstition and philosophy?
A. Aristotle
B. Hippocrates
C. Edward
D. Darwin

63. The response graded by a dietician on an agree or disagree continuum is based on:
A. Visual analog scale
B. Guttman scale
C. Likert scale
D. Adjectival scale

64. Pneumonia that infects lung alveoli is caused by
A. Streptococcus species
B. Plasmodium species
C. Salmonella
D. Haemophilus

65. Enzyme responsible for replication of HIV is:
A. RNA polymerase
B. DNA ligase
C. DNA polymerase
D. Reverse transcriptase

66. Human papilloma virus may cause cancer of
A. Stomach
B. Uterine cervix
C. Liver
D. Urinary bladder

67. Which one of the following infection control measures is directed toward reducing or eliminating the source or reservoir of infection?
A. Prophylactic antimicrobial therapy
B. Passive immunization
D. Social distancing
E. Pasteurization of milk

68. What enzyme is required for polymerase chain reaction (PCR)
A. Taq polymerase
B. Paq polymerase
C. DNA polymerase
D. RNA polymerase

69. If the average of a series of values is 20 and their variance is 4, then the coefficient of variation is:
A. 40%
B. 20%
C. 80%
D. 10%

70. Which one of the following is incorrectly matched?
A. Insulin : Pancreas
B. Epinephrine : Adrenal gland
C. Prolactin : Pituitary gland
D. Oxytocin : Thyroid gland

_____ THE END _____

Answer Key - PHD Public Health - January 2021

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

Question No.	Answer
1	B
2	B
3	C
4	A
5	D
6	B
7	C
8	A
9	D
10	D
11	
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