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## **Institute of Teaching and Research in Ayurveda**

### **Ph.D. Entrance Examination - 2025**

**(3<sup>rd</sup> May 2025)**

**Paper - I**

**Subject**

**Research Methodology & Medical Statistics**



**Question Booklet Code**

**C**

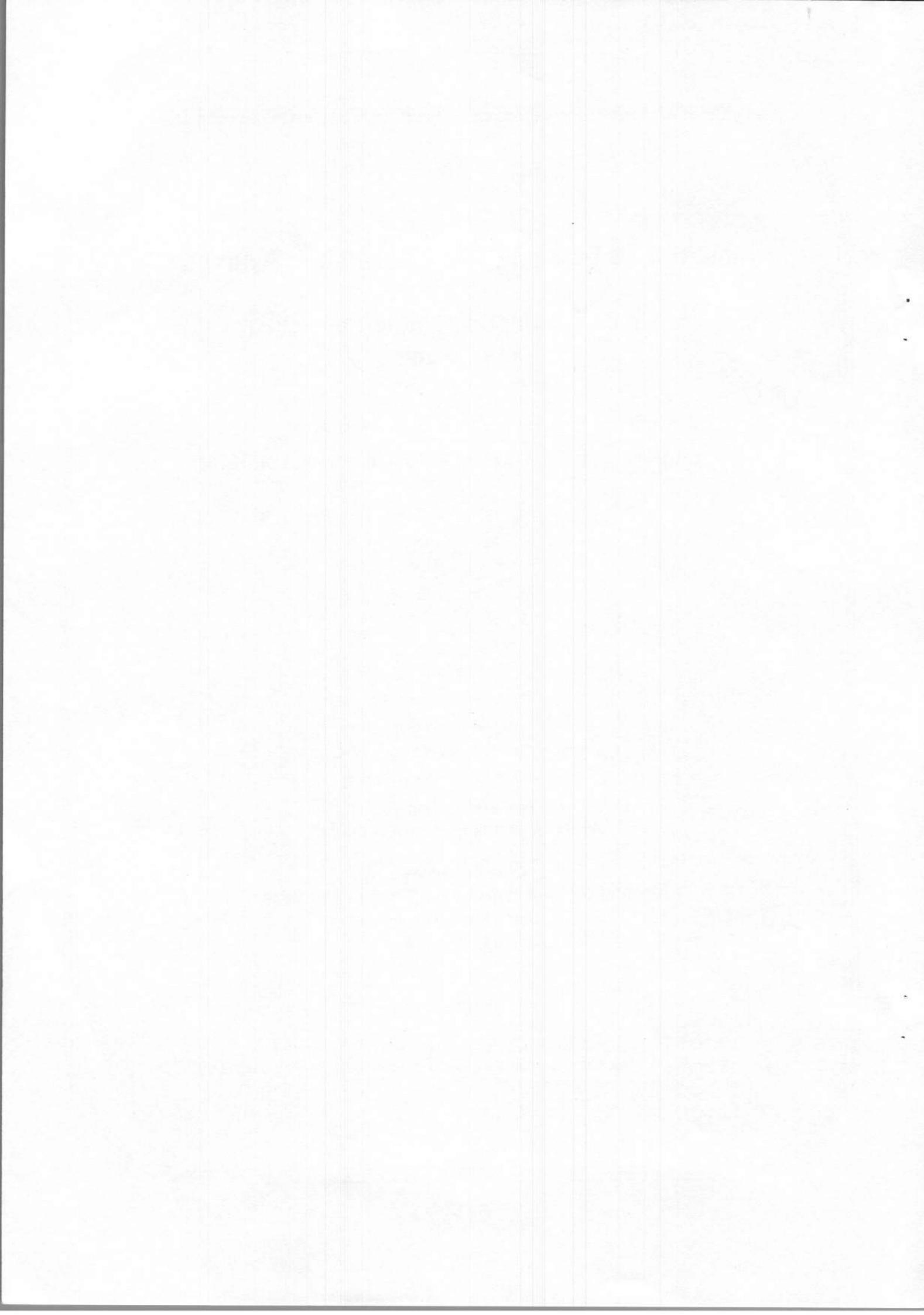
**For admission in  
Ayurvidyavaridhi (Ph.D.-Ayurveda)**

**Conducted by:**

**Institute of Teaching and Research in Ayurveda  
Jamnagar - 361008  
Gujarat, India**

**Note:**

1. Candidates are instructed to **NOT TO OPEN** the question booklet till said to do so.
2. Candidates are advised to read the instructions provided at last page of this question booklet carefully, before answering the questions.



**Research Methodology**

1. Which of the following tools is commonly used to detect plagiarism in scientific writing?
 

(A) Covidence	(B) Turnitin
(C) Ethernets	(D) EndNote
2. Which of the following is an example of a predatory journal?
 

(A) A journal with a rigorous peer-review process and high impact factor.	(B) A journal that publishes articles without proper peer review.
(C) A journal that is indexed in reputable databases like PubMed and Scopus.	(D) A journal that provides open access to all its articles without any fees.
3. Which of the following is a multidisciplinary research database (including science, technology, medicine, social sciences, and arts and humanities) that indexes scholarly literature, including journal articles and conference papers?
 

(A) PubMed	(B) arXiv
(C) Scopus	(D) PsycINFO
4. Ayush Research Portal is developed by \_\_\_\_\_ under the Ministry of Ayush.
 

(A) All India Institute of Ayurveda	(B) Central Council for Research in Ayurvedic Sciences
(C) Institute of Teaching and Research in Ayurveda	(D) Rashtriya Ayurveda Vidyapeeth
5. What type of documents are primarily provided by Cochrane Library?
 

(A) Statistical data sets	(B) Technical standards
(C) Systematic reviews and controlled trials	(D) Patents and technical disclosures
6. A crossover trial is most appropriate when \_\_\_\_\_
 

1) Condition is acute and non-stable 2) Treatment effects are likely to be carryover effect 3) Treatment effects are likely to be reversible and short-lived 4) Condition is chronic or relatively stable	(A) 1 and 2 (B) 3 and 4 (C) 1 and 3 (D) 2 and 4
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7. A reservoir of Indian Theses is \_\_\_\_\_
 

(A) ShodhaGanga	(B) ShodhaSaraswati
(C) ShodhaShuddhi	(D) ShodhaSindhu
8. In pragmatic trial, the goal is to \_\_\_\_\_
 

(A) Maximize internal validity	(B) Minimize external validity
(C) Determine treatment efficacy under ideal conditions	(D) Assess effectiveness in real-world settings

## Research Methodology

9. Which method is used to reduce selection bias in Randomized Controlled Trials?

(A) Stratification (B) Blinding  
(C) Randomization (D) Placebo control

10. What does a Type I error represent in hypothesis testing?

(A) Failing to detect a true effect (B) Rejecting the null hypothesis when it is actually true  
(C) Accepting the null hypothesis (D) Using the wrong statistical test when it is false

11. What is the correct relationship between power and Type II error?

(A) Power =  $\alpha$  (B) Power =  $1 - \alpha$   
(C) Power =  $1 - \beta$  (D) Power =  $\beta$

12. Which of the following is a non-parametric test for comparing medians of two independent samples?

(A) Student's t-test (B) Fisher's exact test  
(C) Mann-Whitney U test (D) Paired t-test

13. Which research scheme has been initiated by Central Council for Research in Ayurvedic Sciences (CCRAS) for Ayurveda Post Graduate Scholars pursuing their MD/MS(Ayu) courses?

(A) PG-SPARK (B) PG-STAR  
(C) PG-SHARK (D) PG-ATPAR

14. The Kaplan-Meier estimator is used to \_\_\_\_\_

(A) Compare means between two groups (B) Estimate survival function  
(C) Model binary outcomes (D) Compute odds ratio

15. When is Fisher's exact test preferred over the Chi-square test?

(A) When sample size is large (B) When expected frequencies are small (<5)  
(C) For paired data (D) For continuous outcomes

16. A 95% confidence interval for a mean implies \_\_\_\_\_

(A) The mean falls within this range 95% of the time (B) There is a 95% chance that the population mean lies within the interval  
(C) 95% of all data points fall in this range (D) If the study was repeated many times, 95% of the intervals would contain the true mean

17. Which test is used to compare the means of two independent samples?

(A) Chi-square test (B) Paired t-test  
(C) Student's t-test (D) ANOVA

18. What is mode?

(A) The average of given data (B) The highest value of given data  
(C) The value that appears most often in given data (D) The middle value of given data

## Research Methodology

**Research Methodology**

28. Which of the following experimental pharmacology model is primarily used to study the analgesic effect of drugs?

(A) Tail-flick test (B) Forced swim test  
 (C) Open field test (D) Elevated plus maze

29. What is true about institutional ethics committee?

i. It shall have a minimum of seven members  
 ii. Chairperson must be from outside of organisation  
 iii. Presence of lay person in IEC meeting is not mandatory  
 iv. Member Secretary shall be affiliated to the institute  
 (A) i, ii and iv (B) ii, iii and iv  
 (C) i, ii and iii (D) i, iii and iv

30. Considering following statements on Phase-I clinical trial, choose the right option.

Statement I- It should usually be carried out by investigators trained in clinical pharmacology  
 Statement II- At least 2 subjects should be used on each dose

(A) Only statement I is true (B) Only statement II is true  
 (C) None of both statements is true (D) Both statements are true

31. \_\_\_\_\_ is an Addendum to ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, 2017, in March 2025 that encourages the scientific community to explore Integrative Medicine with greater credibility and confidence.

(A) Confidentiality statement in Clinical trials on integrative systems of medicine (B) Ethical requirements for Integrative Medicine research  
 (C) Ayush Medicine research requirements (D) Case Record Form in Integrative medicine research

32. \_\_\_\_\_ is an open-access repository of electronic preprints (e-prints)

(A) IEEE Xplore (B) SpringerLink  
 (C) arXiv (D) Cochrane Library

33. When the expected effect size in a clinical trial is small, the required sample size will be \_\_\_\_\_

(A) Decreased significantly (B) Remain unchanged  
 (C) Increased significantly (D) Have no relation with it

34. What type of study is most appropriate for assessing the prevalence of a condition in a population at a specific time point?

(A) Cohort study (B) Cross-sectional study  
 (C) Case-control study (D) Longitudinal study

35. Recall bias is more likely to occur in \_\_\_\_\_

(A) Case-control study (B) Prospective cohort study  
 (C) Randomized controlled trials (D) Cross-sectional study

## Research Methodology

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## GENERAL INSTRUCTIONS

### Ph.D. Entrance Exam 2025

Institute of Teaching and Research in Ayurveda

Jamnagar, Gujarat – 361008

1. The written Test for 100 marks is consists of MCQs of one mark each.
2. There will be 1/4<sup>th</sup> negative marking for incorrect answer.
3. The duration of the entrance test is 90 minutes i.e. 09.30 AM to 11.00 AM
4. The candidates are instructed to fill their Roll no. in the respective columns of OMR sheet and on Question booklet carefully.
5. Candidates are advised to use **black ball pen** for filling the information columns and marking answers.
6. Correct Method for marking answers is  A  B  C  D
7. After opening the question booklet; the candidate are instructed to confirm 1 to 50 MCQs in each booklet in a sequence. Any discrepancies in this regard should immediately be reported to the Room Supervisor / Examination Center Superintendent.
8. Candidates will not be allowed with Books, Notes, Bags, Mobiles, Pagers or any other type of electronic device inside the examination center.
9. Don't mark or write anything on the question booklet except on the page given for rough work.
10. If there is any ambiguity against the question, it should be submitted to the Examination Center Superintendent before 05:00 pm on the day of examination (3<sup>rd</sup> May, 2025); **after that no such complaint will be entertained.**
11. Answer Key, Result and Merit will be displayed on <https://itra.ac.in>. No separate mark sheets or call letter for interview will be posted.
12. Decision of 'Ph.D. Admission Committee' will be final in any discrepancy.