

# Entrance Test for Enrollment in Ph.D. Programme July 2017

Time: 120 Mins.

Max. Marks: 120

Stream : **Engineering**    Discipline : **Mechanical Engineering**    Set : **A**    Test ID : **41**

Name :

Father's Name :

Roll Number :

Date :

Roll Number in words :

Signature of Candidate :

Signature of Invigilator :

### **IMPORTANT INSTRUCTIONS**

- Do not Open seal before start of Exam.
- Fill all the information in various columns in capital letters, with blue/black ball point pen.
- Use of calculators is not allowed.
- All questions are compulsory. No negative marking for wrong answers.
- Each question has only right answer.
- Questions attempted with two or more options/answers will not be evaluated.
- Kindly bring any one of the original photo-identity proofs at the time of entrance test, like Voter ID Card, Driving License, PAN Card or Passport along with **ADMIT CARD**.
- Study the instructions carefully before the start of examination.
- The time duration for the test will be 120 minutes.
- You must report at examination centre 30 minutes prior to examination.
- Test will comprise of two sections. The Section-I will comprise of Research Methodology and section-II will be Subject specific. Each Section will comprise of 60 questions carrying each making total paper of 120 marks.
- **It will be compulsory for the candidate to secure minimum passing marks in each section (which amounts to be 50% i.e. 30 marks for the general category and 45% i.e. 27 for reserved categories in each section).** The passing marks will be 50% of the total i.e. 60 marks for general category and 45% for reserved categories i.e. 54 marks.
- The questions paper will comprise of Multiple Choice Questions.
- Each question will have only one right answer.
- Blank, Cutting, Erasing, Half filling or Question attempted with two or more answers will not be evaluated
- There is no negative marking for wrong answers.
- OMR sheet should not be folded or crushed.
- Use only **BLACK BALL POINT PEN** to fill the ovals.
- Use of pencil is strictly prohibited.
- Ovals on **OMR sheet** should be darkened completely and properly filled.
- Cutting and erasing on **OMR sheet** is not allowed.
- Do not use any stray marks on the **OMR sheet**.
- Do not use marker or white fluid to hide the marks.
- Fill **ROLL NUMBER** and **TEST ID** carefully on the **OMR sheet**.
- Use of calculator is not allowed.
- Log tables may be provided for calculation work, if required.
- The medium of the examination is English only.
- No sheet will be provided for the rough work. Reverse side of the question paper can only be used for rough work.
- **Carrying mobile phones, electronic gadgets, notes or extra papers in examination hall is not allowed.**

# Research Methodology

## Section -I

1. Which of the following is the best way to test a hypothesis according to the hypothetico-deductive method?
  - a. By finding evidence which supports the hypothesis.
  - b. By repeating a study looking for consistency in outcomes.
  - c. By rejecting the hypothesis.
  - d. By looking for instances where the hypothesis fails.
2. Which of the following are the most similar?
  - a. Ordinal, interval and ratio data
  - b. Nominal, ratio, and interval data
  - c. Nominal and ratio data
  - d. Nominal, ordinal and ratio data
3. What sort of variable is dress size?
  - a. Ordinal
  - b. Ratio
  - c. Nominal
  - d. Dependent
4. What is deemed a good measure of the quality of a journal?
  - a. The intake factor.
  - b. The impact factor.
  - c. The OPAC factor.
  - d. The influence factor.
5. Variables in a cross-sectional design are:
  - a. nominal data.
  - b. a mixture of both score and nominal data.
  - c. frequencies.
  - d. score data
6. Studies which measure the same variables in the same cases over time are called:
  - a. lagged.
  - b. panel.
  - c. cross-lagged.
  - d. synchronous.
7. Response rate refers to:
  - a. how confident you want to be about your results.
  - b. how variable participants' responses are.
  - c. the proportion of people who take part in a study.
  - d. how big a population is.
8. 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. significance level.
  - c. confidence interval.
  - d. standard deviation.
9. The purpose of research is:
  - a. to extend the conceptual understanding of a topic.

- b. that the empirical work should be testing a theory.
  - c. primarily to get more data.
  - d. to produce work of publishable quality.
10. Which of the following is the first step in starting the research process?
- a. Searching sources of information to locate problem.
  - b. Survey of related literature
  - c. Identification of problem
  - d. Searching for solutions to the problem
11. Questionnaire is a
- a. Research method
  - b. Measurement technique
  - c. Tool for data collection
  - d. Data analysis technique
12. Which of the following is not covered under Intellectual Property Rights ?
- a. Copyrights
  - b. Patents
  - c. Trade Marks
  - d. Thesaurus
13. Field study is related to
- a. real life situations
  - b. experimental situations
  - c. laboratory situations
  - d. none of the above
14. Which of the following is a non-probability sample ?
- a. Quota sample
  - b. Simple random sample
  - c. Purposive sample
  - d. (a) and (c) both
15. Formulation of hypothesis may not be necessary in
- a. survey studies
  - b. fact finding (historical) studies
  - c. normative studies
  - d. experimental studies
16. All are causes of non sampling errors except
- a. faulty tools of measurement
  - b. inadequate sample
  - c. non response
  - d. defect in data collection
17. The review of the related study is important while undertaking a research because
- a. it avoids repetition or duplication
  - b. it helps in understanding the gaps
  - c. it helps the researcher not to draw illogical conclusions
  - d. all of above
18. Of all of the steps in the research process, the one that typically takes the most time is
- a. selecting a research method.
  - b. developing a hypothesis.
  - c. data collection.
  - d. formulating the problem.