

Seat No: \_\_\_\_\_

Enrolment No: \_\_\_\_\_

**Gujarat Technological University**  
**RESEARCH METHODOLOGY EXAM - 2018 [REGULAR]**

**Subject Code: PH001 [PHP]**  
**Subject Name: Research Methodology**  
**Time: 2.30 PM to 5:30 PM**

**Date: 21-07-2018**  
**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Subject relevant literature/book is permitted to carry in an exam hall (Use of E-Books, Laptops, Mobiles & I-pads is strictly prohibited).

**Q.1** Answer in Brief:

- I** What are the difference between Basic and applied research? Give two examples of each type of research. **2x5 =**
- II** Mr. Singh has eleven research paper to his credit and citation of his published article is as following: **10**

Article no	Citation
1	33
2	28
3	07
4	45
5	03
6	17
7	25
8	18
9	03

10	20
11	09

Calculate the g index and h index of Mr. Singh.

- III** Define following terminologies with reference to experiments:  
a) Reliability b) Accuracy
- IV** Enlist quality indices used to determine quality of two research institutions working on genetic engineering in India. Describe any one quality indices in detail.
- V** What are full forms of the followings:  
a) GUJCOST b) ICMR c) DST d) CSIR
- Q.2 I** Mr Saboo is working on synthesis of newer anti TB compounds in national institute. Kindly guide him so he can avoid unethical practice in research. **06**
- II** Write importance of Literature review in designing research work. **05**
- III** One clinical research hospital had collected data of more than 5000 cancer patients and having lot of data. For useful outcome data should be analysed properly. As a research scientist of the hospital, how you will manage the same? **04**
- IV** Read carefully following Abstract of the research paper and answer the questions: **05**
1. Give appropriate title for this paper.
  2. Review the abstract and give your comments.
  3. Select 3-5 key words for this paper.
  4. Which are the different types of abstract? State the type of the following abstract.
  5. How many words are usually preferred in abstract by reputed journals, this word count includes title and author names?

**Abstract**

Objective : In Ayurveda, many indigenous plants have been claimed to possess diuretic effects, however these are not scientifically investigated till date. The present study was aimed to investigate the diuretic effects of aqueous (aqF) and ethanolic ( EtF) crude extracts of Hemidesmosindicus R. Br. Roots using acute model of rats.

Methods : A single individual doses of AqF and EtF of H. Indicus root (200 mg/kg and 400 mg/kg, p.o, each), frusemide and hydrochorthiazide (25mg /kg ,p.o ,each) as reference diuretic drugs, were administered orally to dehydrated rats. Control groups rats were fed with normal saline 925 ml/ kg, p.o.). All rats were caged in a metabolic cages in a pairs and their urine output was monitored at 5 and 24 hour intervals.



Results : Both extracts significantly increased urine output in higher doses. Also onset of diuretic action was gradual (Within 5 Hr.), it lasted throughout the study period (upto 24 hours). Further the intensity of diuresis induced by AqE(400 mg/kg) in 5 hour is almost similar to furosemide and hydrochlorothiazide. AqE also increased in urinary Na and K level. However routine urine analysis showed non-significant alteration of pH and specific gravity by either dose of crude extracts.

Conclusion: These effects demonstrate possible diuretic actions of *H.indicus* roots extracts and supports its folklore use in various urinary ailments. Further studies need to be done to characterize the active phytoconstituents from roots.

Use appropriate type of graphs for the graphical presentation of the following results of research.

- V
- Different types of marketing and promotional expenses of Pharm company 05
  - Daily Food intake of five groups of rats for two weeks.
  - Indian market for Ibuprofen share of different companies
  - 100 people PPBS data after metformin 500 mg/day
  - Five diseases prevalence of ten countries in 1995, 2000, 2005 and 2010

- Q.3 I
- Identify the mistakes in the following references and rewrite the references with necessary corrections. 04

Namiki, A., Brogi, E., Kearney, M., Kim, E., Wu, T., Couffinhal, T., Hypoxia induces vascular endothelial growth factor in cultured human endothelial cells. *The Journal of Biological Chemistry* : 270, 31189 to 31195 (1995).

Kulkarni AP, Aradhya S. M. Divakar S [2004] Isolation and identification of a radical scavenging antioxidant – punicalagin from pith and capillary membrane of pomogranate fruit. *Food chemistry*, 551:557, 87 (4).

- Which of the following are good research question? Answer Yes or No, and justify your answer. 06
  - Should cell phone use while driving be banned?
  - What is the median household income for residents of Ahmedabad?
  - What is the relationship between final grade and overall course evaluation for GTU students in 2016?
  - What is the effect of consuming Airborne Effervescent Health Formula on the incidence of colds and flu among Government college undergraduates?

- What knowledge, skills, and dispositions do Indian Pharma employers value most in recent graduates?
- Why do teachers with less than three years teaching experience choose to leave the field?

- II
- Ms. Parikar has to present her research work orally in international conference, kindly guide Ms. Parikar about use of visual aids and positive body language for successful presentation. 07

- III
- Answer followings briefly 08
- In Discussion, which verb tense should be used?
  - What is Internal validity?
  - What is rapid communication?
  - Enlist various non parametric tests used in the research.
  - Name commonly used software used for finding plagiarism in the scientific documents.
  - What are search engines used for literature search?
  - Which type of publication cited more frequently?
  - Define copy right.

- Q.4
- Answer Precisely (no description required): 1x10 = 10
- Which are commonly used database for finding citation of articles and impact factor?
  - What is patent? Which are the sites used to find out patent ?
  - In India product filing is possible ?
  - Which test can be used for analyses of ordinal data?
  - What are different types of hypothesis ?
  - Which reference style is used commonly in oral presentation?
  - What is typr-II error ?
  - If there are 150 and 350 citations to items published in 2016 and 2017 respectively with 150 and 100 source items published in 2016 and 2017 respectively, then calculate the impact factor for the journal.
  - What is immediacy index ?
  - Enlist recent techniques used in documentation of research.