

Library Section	Number of books
Main Stack	15750
Reading Room	10500
Reference	5250
Bound Journal	3500

Prepare a Pie Diagram following proper steps.

- c) Find the regression equation of 'No. of shares' on 'No. of citations' of 10 articles in DESIDOC Bulletin of Information Technology from the following data : 10

No. of shares (X)	25	22	28	26	35	20	22	40	20	18
No. of citations (Y)	18	15	20	17	22	14	16	21	15	14

3. Write critical notes on **any two** of the following terminologies : 5x2

- PERT in Operations Research
- Kurtosis
- Stratified random sampling
- Ogive

MASTER OF LIBRARY AND INFORMATION SCIENCE

(DIGITAL LIBRARY) EXAMINATION, 2023

(1st Year, 1st Semester)

Quantitative Techniques

Course : MLDL-03

Time : Two Hours

Full Marks : 50

The Figures in the margin indicate full marks.

Answer any five questions

- 1A. Write answers as instructed.

- a) Differentiate the following concepts :

- Null and Alternative (as Test of Hypothesis)
- Mean and Mode (as measure of Central Tendency)

- b) Calculate average marks of the MLIS students in Quantitative Techniques from the following distribution :

6

Marks	15-19	20-24	25-29	30-34	35-44	45-59
No. of students	37	81	43	24	9	6

- c) In the COVID-19 pandemic, 400 library users infected by Corona virus. 150 users got no vaccination and of these 55 were dead. Of those who did get vaccination 60.

[Given : Chi-square value is 6.64 at 1% level for 1 d.f.]

OR

[Turn over

[2]

1B. a) What do you know about the following concepts ? 2x2

- i) Statistical inference
- ii) Root-Mean-Square-Deviation

b) Find the modal consolidated salaries of the contractual library staff from the following table : 6

Salary (Rs. in '000)	10	20	30	40	50	60
No. of library staff	15	32	51	78	97	109

c) Following table shows the data about the opinions of 35 university librarians of the factor "LIBRARY AUTOMATION" responsible for EFFECTIVE LIBRARY SERVICE.

Opinion of the Librarians	SA	A	NO	DA	SDA
No. of Librarians	15	9	3	3	5

SA=Strongly Agree, A=Agree, NO=No Opinion, DA=Dis-Agree, SDA=Strongly Dis-Agree

Is there any significant difference of opinions given by the librarians ? Draw a conclusion using K-S Test ? [Given : K-S probability at 95% confidence level = 0.23]

2A. a) Show your acquaintance with the following concepts :

2x2

- i) Median
- ii) Histogram

[3]

b) Following data show the number of books issued by a school library from Day-1 to Day 40 (i.e. consecutive 40 days). 6

18, 27, 11, 18, 15, 18, 20, 22, 18, 9, 20, 28, 17, 7, 27, 10, 8, 9, 15, 15, 14, 11, 10, 11, 5, 13, 9, 23, 18, 5, 8, 7, 5, 22, 27, 20, 28, 30, 26, 16

Construct the grouped frequency distribution table from the above data in the ascending order starting with class interval 5-10, 11-16, so on.

c) Calculate 3-years simple moving averages for the following time series. Also, plot actual data and moving averages on a graph (free-hand). Also, find the 3-years weighted moving averages with weights 1, 2, 1, respectively. 10

Year	2010	2011	2012	2013	2014	2015	2016	2017
No. of e-Journals ('000)	170.0	154.8	156.6	158.9	140.3	154.2	160.7	178.3

or

2B. a) Write short notes on the following concepts : 2x2

- i) Snowball sampling in the context of library survey.
- ii) Frequency density.

b) Data in the following table show the number of books in different sections in a college library. 6

[Turn over