K. K. Wagh Institute of Engineering Education and Research, Nashik

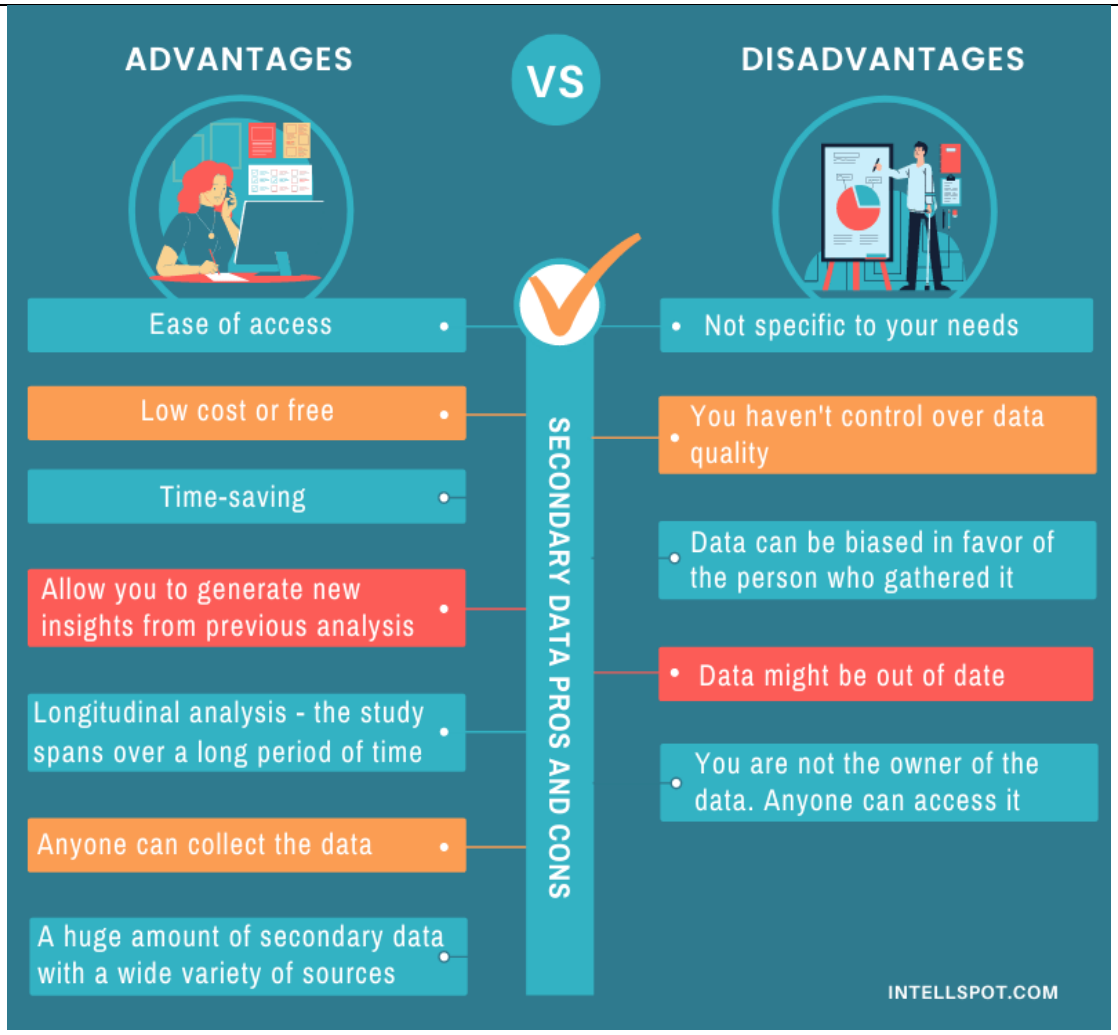
(An Autonomous Institute from A. Y. 2022-23)

Model Answer

End-Sem Examination-II, Summer 2025

Academic Year: 2025-2026	Semester: II
Class: FYMBA	Program: MBA
Branch Code: 10	Pattern: 2024
Name of Course: BRM	Course Code: 2410516

Q.1	Explain various trends in business research • Social Listening • More AI • Digital Transformation • BPO • Consumer Brand Value Alignment • Network Marketing • Franchising • Data Analytics • Emotional Market Research • Remote Work • Customer Experience
Q.2	Explain Exploratory research design • **Exploratory research** is a methodology approach that investigates research questions that have not previously been studied in depth. • Exploratory research is often qualitative and primary in nature. However, a study with a large sample conducted in an exploratory manner can be quantitative as well. It is also often referred to as interpretive research or a grounded theory approach due to its flexible and open-ended nature. **Data Collection:** • Primary : Survey, Focused Group, Interview • Secondary : Case Study, Literature Review, Polls
Q.3	a) Write down advantages and disadvantages of secondary data.



OR

b) Form a questionnaire for analysis of success Maverick 2024 event. Also to find out very famous game.

1) Name

2) Department

3) In which game you have participated

4) Give the rating for below games
a) TH 2) Box Cricket 3) BGMI 4) MCQ 5) Chess
5) Which game you like the most

6) Why you like that game most
a) Arrangement b) Game Strategy c) New levels d) Management of game

	7) What is your opinion about overall Maverick event a) Bad 2) Good 3) Very Good 4) Awesome 8) Why you have participated in this event a) Name of Dept 2) name of the game 3) Just to Enjoy 4) For certificate 9) Any suggestions for improvement
	c) Explain Type I error and Type II error with the help of an example. 1) Reject Ho when True 2) Accept Ho when false **OR** d) To make a prediction of GS of the university plan your strategy to predict the GS. Also mention why we need to consider Type I and Type II error concept while analysing the data. Departmental Sampling Type 1 Error and Type 2 as we don't the information about population.
Q.4	a) There are 60 students in each of the below department. Civil (C1 to C60), MBA (M1 to M60), ENTC (E1 to E60) and Chemical (CH1 to CH60) Computer (CO1 to CO60. Draw random sample of 10 students using below sampling methods. (Follow given sorting) (Write down sample points for each method) 1) SRSWR 2) Systematic Sampling 3) Stratified Random Sampling 4) Cluster Sampling Answer : 1) Any 10 sample 2) N = 300 n= 10 k= 30. Group of 30. Simple random for first 30. If got 4 then select 4 + kth sample. 3)As this by department. It is already one strata as per the department. Draw 2 from each stratum. 4) Make 5 group without any characteristic. Draw 2 from each stratum. **OR** b) MBA department wants to conduct a survey to find out the students opinion about new smartphones in the market. There are 5 divisions A, B, C, D in MBA department having 50 students in each of the division. (A1 to A50, B1 to B50 etc) Select 10

students for the survey by below methods. (Follow given sorting) (Write down sample points for each method)

1) Stratified Random Sampling
2) Systematic sampling
3) Cluster sampling
4) SRSWOR

1) Any 10 sample
2) N = 250 n= 10 k= 25. Group of 25. Simple random for first 25. If got 4 then select 4 + kth sample.
3)As this by department. It is already one strata as per the department. Draw 2 from each stratum.
4) Make 5 group without any characteristic. Draw 2 from each stratum.

c) For the following data, calculate the coefficient of Rank Correlation.

X	80	91	99	71	61	81	70	59
Y	123	135	154	110	105	134	121	106

Solution.

Table : Computation of Rank Correlation Coefficient

x	Rank x	y	Rank y	Rank difference D	Squared rank difference D^2
80	4	123	4	0	0
91	2	135	2	0	0
99	1	154	1	0	0
71	5	110	5	− 1	1
61	7	105	8	− 1	1
81	3	134	3	0	0
70	6	121	5	1	1
59	8	106	7	1	1
$n = 8$					$\Sigma D^2 = 4$

Coefficient of rank correlation is given by :

$$R = 1 - \frac{6\Sigma D^2}{n(n^2-1)} = 1 - \frac{6\times 4}{8(64-1)} = 1 - \frac{3}{63} = \frac{60}{63} = \frac{20}{21} = 0.952.$$

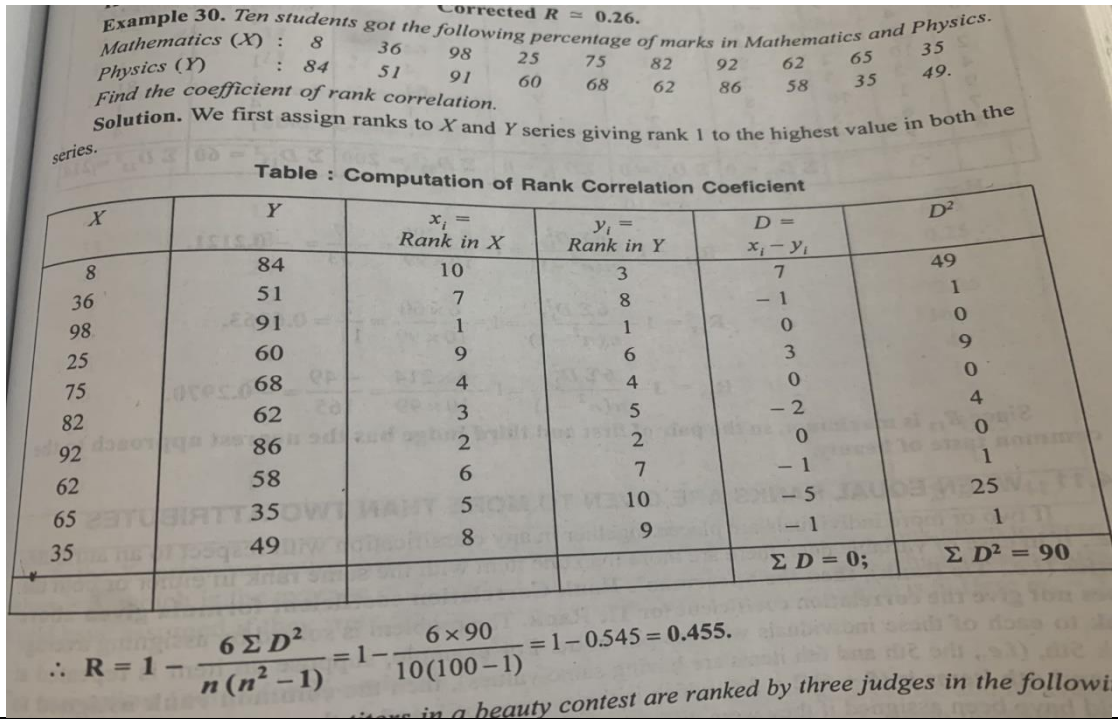
[Here n

OR

d) Ten students got the following percentage of marks in the BRM and Economics

BRM	8	36	98	25	75	82	92	62	65	35
ECO	84	51	91	60	68	62	86	58	35	49

Find the coefficient of rank correlation



Corrected $R = 0.26$.

Example 30. *Ten students got the following percentage of marks in Mathematics and Physics.*

Mathematics (X)	8	36	98	25	75	82	92	62	65	35
Physics (Y)	84	51	91	60	68	62	86	58	35	49.

Find the coefficient of rank correlation.

Solution. We first assign ranks to X and Y series giving rank 1 to the highest value in both the series.

Table : Computation of Rank Correlation Coeficient

X	Y	x_i = Rank in X	y_i = Rank in Y	$D = x_i - y_i$	D^2
8	84	10	3	7	49
36	51	7	8	− 1	1
98	91	1	1	0	0
25	60	9	6	3	9
75	68	4	4	0	0
82	62	3	5	− 2	4
92	86	2	2	0	0
62	58	6	7	− 1	1
65	35	5	10	− 5	25
35	49	8	9	− 1	1
				$\Sigma D = 0$;	$\Sigma D^2 = 90$

$$\therefore R = 1 - \frac{6\Sigma D^2}{n(n^2-1)} = 1 - \frac{6\times 90}{10(100-1)} = 1 - 0.545 = 0.455.$$

... beauty contest are ranked by three judges in the followi

Q.5

a) A test was conducted for the students before and after the training. The test score were recorded for the comparison purpose. Below table gives the test score. Zα = 1.96

Candidate	A	B	C	D	E
Marks before training	35	40	30	32	25
Marks before training	40	38	32	40	25

Test whether the training provided was effective or not with 5% level of significance.

Answer:

Candidates	Before	After	D = A -B	D^2
A	35	40	5	25
B	40	38	-2	4
C	30	32	2	4
D	32	40	8	64
E	25	25	0	0
Total			**13**	**97**

Ho : B = A
H1: B /= A

Two Tailed

TS = D / SE (D)
SE (D) = S / root (n)

$S^2 = (\sum D^2 / n-1) - (\sum(D)^2 / n(n-1))$

$S^2 = 97/4 – 169/20 = (485-169) / 20 = 316/20 = 15.8$

SE(D) = root (15.8 / 5) = root (3.16) = 1.78

TS = 2.6 / 1.78 = 1.460

As 1.460 is less than 1.96. We accept the null hypo.

OR

b) Theatre manager started a special scheme to attract the customers. Below data shows the customers occupancy before and after the scheme for 5 theatres. $Z\alpha = 2.58$

Theatre	Vikas	Vijay	Mamata	Cinemax	Divya
Marks before training	100	90	120	125	90
Marks before training	140	98	132	120	80

Test whether the scheme is effective or not with 1% level of significance.

Answer:

Theatre	Before	After	D = A –B	D^2
Vikas	100	140	40	1600
Vijay	90	98	8	64
Mamata	120	132	12	144
Cinemax	125	120	-5	25
Divya	90	80	-10	100
Total			**45**	**1933**

Ho : B = A

H1: B /= A

Two Tailed

TS = D / SE (D)
SE (D) = S / root (n)

$S^2 = (\sum D^2 / n-1) - (\sum (D)^2 / n(n-1))$

$S^2 = 1933/4 – 2025/20 = (9665-2025) / 20 = 7640/20 = 382$

SE(D) = root (382 / 5) = root (76.4) = 8.74

TS = 9 / 8.74 = 1.029

As 1.029 is less than 2.58. We accept the null hypo.

c) Solve the following.

Before an increase in excise duty on tea 400 people out of of a sample of 500 persons were found to be tea drinkers. After an increase in the duty, 400 were known to be tea drinkers out of 600. Do you think that there has been a significant decrease in the consumption of tea after increase in excise duty? Use 5 % los. Take $Z\alpha = 1.645$.

P1 = Sample proportion of tea drinkers before increase
P1 = 400 / 500 = 0.8

P2 = Sample proportion of tea drinkers after increase
P2 = 400 / 600 = 0.67

P = (n1p1 + n2p2) / (n1 + n2) = (0.8 * 500 + 0.67 * 600) / (500 + 600) = 8 /11

Q = 1 – P = 3/11

SE(p1 – p2) = root (pq (1/n1 + 1/n2)) = 0.027

Z = p1 –p1 / SE(p1 – p2) = (0.80 – 0.67) / 0.027 = 4.81

AS 4.84 > 1.645. We reject Ho.

OR

d) In a random sample of 500 persons 200 were found to be consumer of vegetable oil. In another sample of 400 persons from Gujarat 200 are found to be consumer of vegetable oil. Discuss whether the data reveal a significant difference between

	Maharashtra and Gujarat so far as the proportion of veg oil consumer is concerned. $Z\alpha = 2.58$

Answer

P1 = 200 / 500 = 0.40

P2 = 200 / 400 = 0.50

P = n1p1 + n2p2 / n1 + n2 = 4/9 Q= 5/9

SE = root ((pq)(1 / n1) + (1/ n2)) = root(1 / 900) = 0.033

Z = 0.4 – 0.5 / 0.033 = 3.03

As 3.03 > 2.58. Hypo is rejected.