Post Graduate Diploma in Management (Hospital & Health Management)
PGDM – 2022-24 Batch
Term – 1st Year 2nd Term End Examination

Course & Code	:	**Essentials of Epidemiology CC-605**	**Reg. No.**	:	
Term & Batch	:	**II, 2022-24**	**Date**	:	
Duration	:	**2 Hrs**	**Max. Marks**	:	**70**

Instructions:

- Budget your time as per the marks given for each question and write your answer accordingly.
- Don't write anything on the Question Paper except writing your Registration No.
- Mobile Phones are not allowed even for computations.

Part A (From Q 1 to Q 6; solve any 5); Q 7 is mandatory)
Fill in the Blanks and Multiple-Choice Questions

Q.1	John Snow is known for his investigation on occurrence of _____disease in London
Q.2	_____is the ability of the test to identify correctly those who do not have the disease.
Q.3	The Framingham study is best known for (a)_____studies and on what specific disease (b)_____

Q.4 Select the correct statement:

a. The attributable risk is the excess risk of disease in the exposed compared to the non-exposed during a defined period of time.

b. The attributable risk is a ratio of the disease risk in the exposed compared to the non-exposed during a defined period of time

c. The attributable risk is a ratio of the disease risk in the non-exposed compared to the exposed during a defined period of time.

d. The attributable risk is the prevalence of disease in the exposed minus the prevalence of disease in the non-exposed.

e. The attributable risk is the disease risk in a defined group at a specific point in time

Q.5 A case-control study is characterized by all of the following except:

a. It is relatively inexpensive compared with most other epidemiologic study designs.
b. Patients with the disease (cases) are compared with persons without the disease (controls)
c. Incidence rates may be computed directly.
d. Assessment of past exposure may be biased.
e. Definition of cases may be difficult

Q.6 Which of the following is not an advantage of a prospective cohort study?

a. It usually costs less than a case-control study.
b. Precise measurement of exposure is possible.
c. Incidence rates can be calculated.
d. Recall bias is minimized compared with a case-control study.
e. Many disease outcomes can be studied simultaneously

Q.7. Mention whether the results are statistically significant or not at 95% confidence level (5 * 1 = 5 marks; any 5 to be written): In answer you must write only one word that is SIGNIFICANT/ INSIGNIFICANT/ WRONG CALCUALTION

1	P value = 0.03
2	P value = 0.03 with 95% CI 1.4 - 2.4
3	P value = 0.03 with 95% CI 0.8 – 2.4
4	P value = 0.06
5	P value = 0.03 with 95% CI 1.4- 2.4; OR (point estimate) = 1.2
6	P value = 0.03 with 95% CI – 1.4 - - 2.4; OR (point estimate) = - 1.8

PART B Attempt any FOUR questions. (15 + 5 = 20 marks)

Q. 8. **Match the following: (5 * 3 = 15 marks; any 5 to be done)**
(You have to draw the table correctly in your copy with row wise matching)

Set A			
	RR		EXAMPLE
1	1.5	A	VITAMIN C AND COLON CANCER
2	1	B	LUNG CANCER AND SMOKING
3	0.5	C	KAJAL APPLICATION AND BIG EYES OF BABIES

Set B			
	PARAMETER		IMPORTANCE TO
1	AR	A	PUBLIC HEALTH SPECIALISTS
2	RR	B	PUBLIC HEALTH SPECIALISTS + CLINICIANS
3	POPULATION AR	C	CLINICIANS

Set C			
	PARAMETER		IMPORTANCE
1	CFR	A	BURDEN OF DISEASE
2	SPECIFIC DR	B	VIRULENCE OF ORGANISM
3	PROPOTIONAL MORTALITY RATE	C	AT RISK POPULATION

Set D			
	PARAMETER		METHOD OF REMOVAL OF CONFOUNDER
1	RCT	A	STATIFICATION
2	COHORT	B	MATCHING
3	CASE CONTROL	C	RANDOMIZATION

Set E			
	BIAS		METHOD OF REMOVAL OF CONFOUNDER
1	RECALL	A	RCT
2	ATTRITION	B	CASE CONTROL
3	HAWTHORNE EFFECT	C	COHORT

Set F			
	TYPES OF COHORTS		METHOD OF REMOVAL OF CONFOUNDER
1	PROSPECTIVE	A	RCT
2	AMBISPECTIVE	B	CASE CONTROL
3	HAWTHORNE EFFECT	C	COHORT

Q.9. Describe incidence rate and prevalence rate. How do you calculate them? Or;

Write a short note on sources of bias. (5marks)

PART C

Attempt any EIGHT questions. (40 Marks)

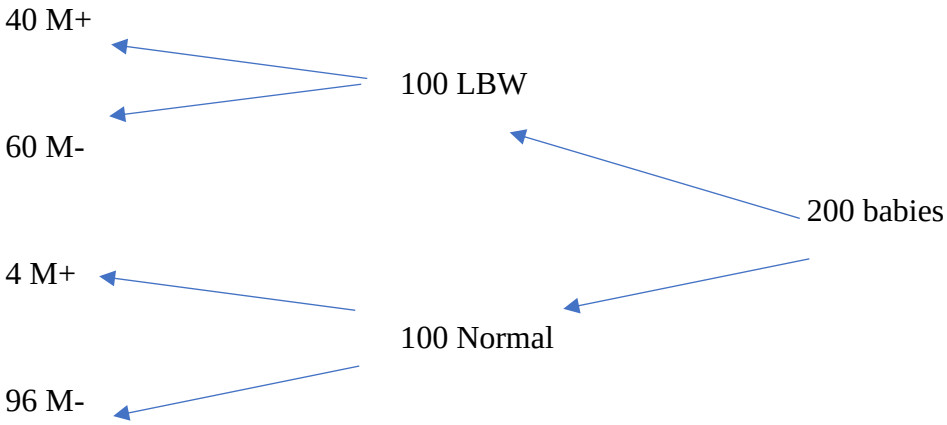
1. **Write the formulae of including numerator, denominator, and multiplication factors: (10 * 1 = 10 marks); any 10 to be written**

1	Incidence
2	Prevalence
3	Case Fatality Rate
4	Specific Death Rate
5	Standardised Mortality Rate
6	Proportional Mortality Rate
7	Survival Rate
8	Odds Ratio
9	Risk Ratio
10	Risk Difference
11	Proportion Attributable Risk
12	Number Needed to Treat

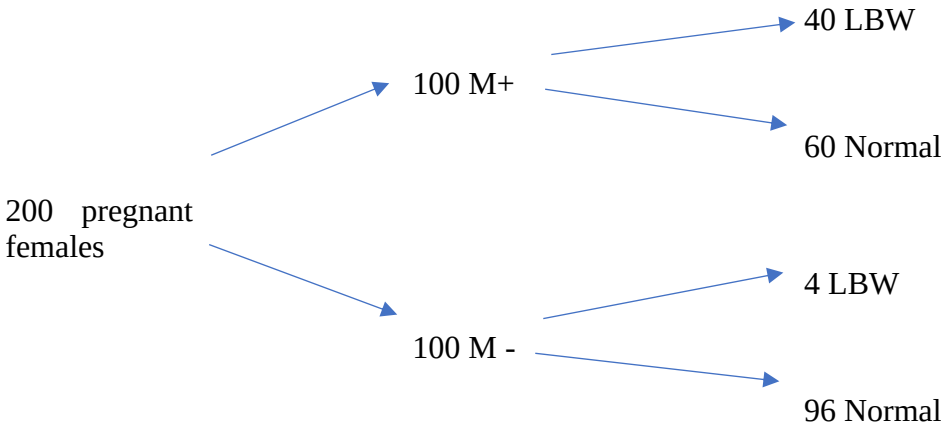
2. **Comment on the following epidemiologically and statistically. (5 * 2 = 10); each answer should be written in maximum 5 lines. Write any two.**
    - **a.** MMR for India as on 31/01/2023 is 97/ 1 lakh population. Is this a rate or a ratio?
    - **b.** CFR for rabies is 100% and COVID 19 is 1%. Which disease should we be more scared of and why?
    - **c.** Consumption of Sex Selective Drug (SSD) and Neural Tube defects; OR = 5; 95% CI is 4-6; p value is 0.03. How will you interpret the results?
    - d. SBP using mercury sphygmomanometer is 120 mm Hg for Dr Pandey. Dr Mahobia developed an application to measure SBP. 3 readings are as follows: 139, 115, 109. Comment on the validity and reliability of the same.

3. **Calculate suitable epidemiological parameters for the flowcharts given below: (5 * 3 = 15).**

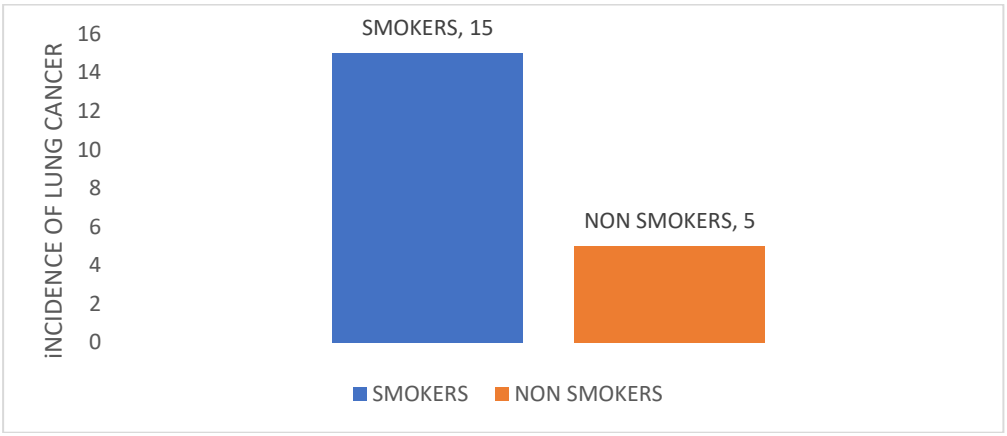
   a. **Calculate suitable epidemiolocal parameter for this flowchart:**



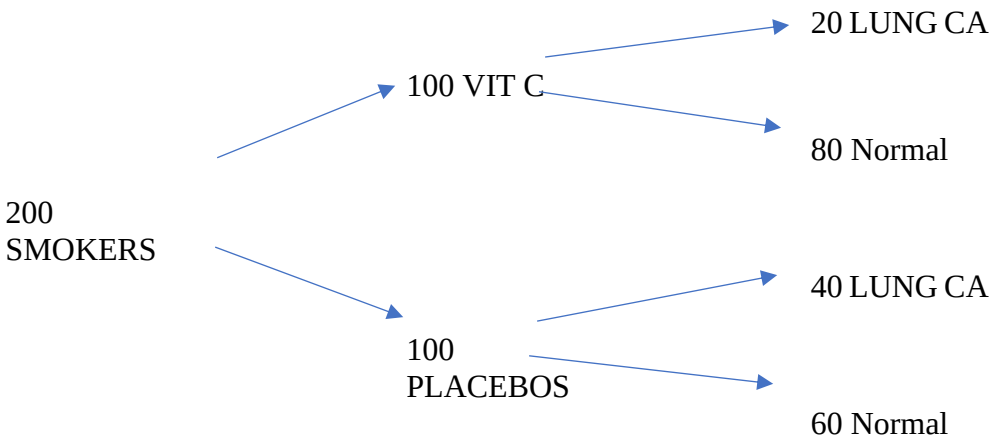
   b. **Calculate suitable epidemiolocal parameter for this flowchart:**



   c. **Calculate the AR and PAR**



d. **Calculate Number Needed to Treat**



4. **Describe steps involved in a Cohort Study and its advantages Or Describe incidence rate and prevalence rate. How do you calculate? (5 marks)**