

INI CET Community Medicine

Sample Paper – 8

Duration: 14 Minutes

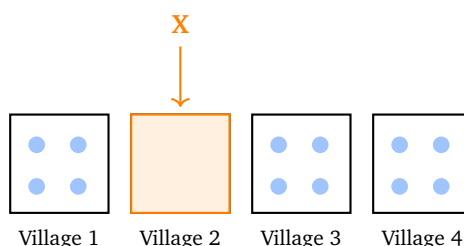
Maximum Marks: 15

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Community Medicine (Preventive and Social Medicine) content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Community Medicine items you actually meet in the real 200-question paper.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Epidemiology and Biostatistics

Q1. The schematic shows a population split into natural geographical groups (villages). A few whole groups are chosen at random and every person in the chosen group (marked X) is surveyed. This sampling method is:



- (A) Simple random sampling
(B) Stratified random sampling



- (C) Systematic sampling
- (D) Cluster sampling

Q2. Which of the following primarily determines the sample size needed for a community prevalence survey?

- (A) The total size of the source population only
- (B) The budget and number of investigators available
- (C) The expected prevalence, the allowable error and the confidence level
- (D) The name of the sampling frame used

Q3. A field investigator selects every 10th house on a village register after choosing the first house at random. This sampling method is:

- (A) Simple random sampling
- (B) Stratified random sampling
- (C) Cluster sampling
- (D) Systematic sampling

Communicable Diseases

Q4. Leprosy (Hansen's disease) is caused by:

- (A) *Mycobacterium tuberculosis*
- (B) *Mycobacterium bovis*
- (C) *Mycobacterium leprae*
- (D) *Mycobacterium avium*

Q5. Under the WHO operational classification used by the national programme, a leprosy patient with more than five skin lesions (and a positive skin smear) is classified as:

- (A) Paucibacillary leprosy
- (B) Multibacillary leprosy



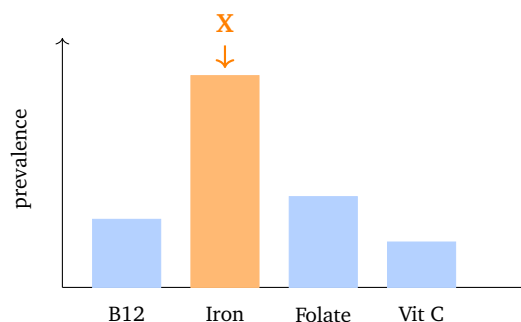
- (C) Indeterminate leprosy
- (D) Neuritic leprosy

Q6. Which national programme delivers free multidrug therapy for the control and elimination of leprosy in India?

- (A) National Leprosy Eradication Programme (NLEP)
- (B) National Tuberculosis Elimination Programme (NTEP)
- (C) National Vector Borne Disease Control Programme (NVBDPCP)
- (D) National Programme for Control of Blindness (NPCB)

Non-communicable Diseases and Nutrition

Q7. The bar chart shows the relative frequency of common nutritional deficiencies causing anaemia. The single most common nutritional cause of anaemia worldwide (marked X) is deficiency of:



- (A) Vitamin B12
- (B) Iron
- (C) Folate
- (D) Vitamin C

Q8. Universal salt iodisation is the principal public-health strategy for the prevention of:

- (A) Iodine deficiency disorders (goitre, cretinism)
- (B) Iron deficiency anaemia
- (C) Vitamin A deficiency



(D) Endemic fluorosis

Maternal, Child Health and Family Planning

Q9. Continuous skin-to-skin contact of a low birth weight baby against the mother's bare chest, which maintains warmth and supports breastfeeding, is known as:

- (A) Exclusive breastfeeding
- (B) Kangaroo mother care
- (C) Home-based newborn care
- (D) Complementary feeding

Q10. As per WHO and national guidelines, exclusive breastfeeding is recommended for the first:

- (A) 12 months of life
- (B) 3 months of life
- (C) 4 months of life
- (D) 6 months of life

Q11. A newborn is defined as low birth weight when the birth weight, measured within the first hours of life, is less than:

- (A) 2500 grams
- (B) 3000 grams
- (C) 2000 grams
- (D) 1500 grams

Environmental and Occupational Health

Q12. Indoor residual spraying with insecticides such as DDT and synthetic pyrethroids is a key vector-control method used mainly against:

- (A) Malaria (adult mosquito vectors)



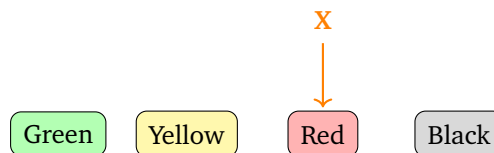
- (B) Cholera (water-borne spread)
- (C) Tuberculosis (droplet spread)
- (D) Leprosy (prolonged contact)

Q13. Autoclaving (moist heat under pressure) applied to surgical instruments achieves:

- (A) Disinfection only (kills vegetative organisms, spares spores)
- (B) Sterilisation (destruction of all microorganisms, including spores)
- (C) Skin antisepsis
- (D) Pasteurisation of the load

Health Programmes, Demography and Health Systems

Q14. The chart shows the colour-coded triage tags used at a mass-casualty site. The tag (marked X) assigned to a victim who needs immediate life-saving intervention is:



- (A) Green tag (minor, walking wounded)
- (B) Yellow tag (delayed, can wait)
- (C) Red tag (immediate, life-threatening)
- (D) Black tag (dead or expectant)

Q15. The phase of the disaster-management cycle that includes search and rescue, triage, epidemic surveillance and rapid relief immediately after an event is the:

- (A) Mitigation phase
- (B) Preparedness phase
- (C) Response (relief) phase
- (D) Rehabilitation and recovery phase



Detailed Solutions**Q1.****Solution**

Concept – cluster sampling: The unit sampled is a natural group, not an individual.

Step 1 – read the schematic: The population is divided into ready-made groups (villages). A few whole groups are picked at random.

Step 2 – name the method: Surveying every person in the selected groups is **cluster sampling**, useful when no list of individuals exists.

Why the other options are wrong:

- A, simple random: needs a complete list of individuals and picks persons, not whole groups.
- B, stratified: divides into homogeneous strata and samples from every stratum.
- C, systematic: picks every kth unit after a random start.

Final Answer: Cluster sampling $\Rightarrow$

Answer: (D) [Go Back to Q1](#)

Q2.**Solution**

Concept – sample size: Statistical inputs, not logistics, set the size.

Step 1 – list the drivers: Required sample size rises with the **expected prevalence spread, a smaller allowable error, and a higher confidence level**.

Step 2 – apply: The standard formula $n = Z^2pq / d^2$ uses exactly these terms.

Why the other options are wrong:

- A, population size: only matters as a small finite-population correction, not the main driver.
- B, budget and staff: practical limits, not statistical determinants.
- D, name of the frame: irrelevant to the calculation.

Final Answer: Expected prevalence, allowable error and confidence level $\Rightarrow$

Answer: (C) [Go Back to Q2](#)



Q3.

Solution

Concept – systematic sampling: A fixed interval with a random start.

Step 1 – read the method: Every 10th house after a random first house means a sampling interval $k = 10$.

Step 2 – name it: Selecting units at a regular interval is **systematic sampling**.

Why the other options are wrong:

- A, simple random: each unit is drawn independently, not at a set interval.
- B, stratified: samples within predefined strata.
- C, cluster: samples whole groups, not spaced individuals.

Final Answer: Systematic sampling $\Rightarrow$

Answer: (D) [Go Back to Q3](#)

Q4.

Solution

Concept – causative organism of leprosy: An acid-fast bacillus with a preference for cool tissues.

Step 1 – name the organism: Leprosy is caused by **Mycobacterium leprae**, an obligate intracellular acid-fast bacillus.

Step 2 – features: It cannot be cultured on artificial media and grows best in cooler skin and peripheral nerves.

Why the other options are wrong:

- A, M. tuberculosis: causes tuberculosis.
- B, M. bovis: bovine tuberculosis, basis of BCG vaccine.
- D, M. avium: opportunistic infection in immunocompromised hosts.

Final Answer: Mycobacterium leprae $\Rightarrow$

Answer: (C) [Go Back to Q4](#)



Q5.

Solution

Concept – WHO classification of leprosy: The lesion count guides therapy.

Step 1 – apply the cut-off: More than five skin lesions (or a positive slit-skin smear) defines **multibacillary** leprosy.

Step 2 – treatment link: Multibacillary cases receive a 12-month multidrug regimen of rifampicin, clofazimine and dapsone.

Why the other options are wrong:

- A, paucibacillary: one to five lesions, smear-negative, treated for 6 months.
- C, indeterminate: an early, unclassified single lesion.
- D, neuritic: a purely nerve form without skin lesions.

Final Answer: Multibacillary leprosy ⇒ B

Answer: (B) [Go Back to Q5](#)

Q6.

Solution

Concept – national leprosy programme: One programme owns leprosy control in India.

Step 1 – name it: The **National Leprosy Eradication Programme (NLEP)** provides free multidrug therapy through general health services.

Step 2 – goal: It works toward elimination, defined as prevalence below 1 case per 10,000 population.

Why the other options are wrong:

- B, NTEP: tuberculosis programme.
- C, NVBDCP: vector-borne diseases such as malaria and dengue.
- D, NPCB: blindness control.

Final Answer: National Leprosy Eradication Programme ⇒ A

Answer: (A) [Go Back to Q6](#)



Q7.

Solution

Concept – nutritional anaemia: One micronutrient dominates as a cause.

Step 1 – read the chart: The tallest bar (X) is iron, showing it is the leading nutritional deficiency behind anaemia.

Step 2 – confirm: Iron deficiency produces a microcytic hypochromic anaemia and is the world's commonest nutritional disorder.

Why the other options are wrong:

- A and C, B12 and folate: cause macrocytic anaemia but are far less common than iron deficiency.
- D, vitamin C: aids iron absorption but is not itself the main cause.

Final Answer: Iron $\Rightarrow$

Answer: (B) [Go Back to Q7](#)

Q8.

Solution

Concept – salt iodisation: Iodising salt corrects a specific deficiency.

Step 1 – match the strategy: Universal salt iodisation prevents **iodine deficiency disorders** such as goitre and cretinism.

Step 2 – standard: Salt is fortified to supply iodine at the consumer level across the whole population.

Why the other options are wrong:

- B, iron deficiency: addressed by iron folic acid supplementation, not salt iodisation.
- C, vitamin A deficiency: prevented by vitamin A supplements.
- D, fluorosis: caused by excess fluoride, unrelated to iodine.

Final Answer: Iodine deficiency disorders $\Rightarrow$

Answer: (A) [Go Back to Q8](#)



Q9.

Solution

Concept – care of the low birth weight baby: Warmth and feeding are the priorities.

Step 1 – name the practice: Continuous skin-to-skin contact on the mother's chest is **Kangaroo mother care**.

Step 2 – benefits: It maintains temperature, promotes breastfeeding and reduces neonatal mortality in low birth weight infants.

Why the other options are wrong:

- A, exclusive breastfeeding: a feeding practice, not the skin-to-skin method.
- C, home-based newborn care: a broader package of home visits by health workers.
- D, complementary feeding: introduction of solids after 6 months.

Final Answer: Kangaroo mother care $\Rightarrow$ **B**

Answer: (B) [Go Back to Q9](#)

Q10.

Solution

Concept – exclusive breastfeeding: A defined duration is recommended.

Step 1 – state the rule: Exclusive breastfeeding, with no other food or water, is advised for the first **6 months** of life.

Step 2 – then: Complementary feeding begins at 6 months while breastfeeding continues up to 2 years.

Why the other options are wrong:

- A, 12 months: too long for the exclusive phase.
- B and C, 3 and 4 months: too short; early foods raise infection and malnutrition risk.

Final Answer: 6 months of life $\Rightarrow$ **D**

Answer: (D) [Go Back to Q10](#)



Q11.

Solution

Concept – low birth weight: A single cut-off defines the category.

Step 1 – state the cut-off: A baby weighing less than **2500 grams** at birth is low birth weight.

Step 2 – significance: Low birth weight is a major predictor of neonatal illness and death, whether from prematurity or growth restriction.

Why the other options are wrong:

- B, 3000 g: above the cut-off, a normal weight.
- C, 2000 g: below 2500 g and already low birth weight, but not the defining threshold.
- D, 1500 g: the separate cut-off for very low birth weight.

Final Answer: 2500 grams $\Rightarrow$

Answer: (A) [Go Back to Q11](#)

Q12.

Solution

Concept – indoor residual spraying: Spraying walls kills resting adult mosquitoes.

Step 1 – match the disease: Indoor residual spraying with DDT or pyrethroids targets the adult female *Anopheles* and controls **malaria**.

Step 2 – mechanism: Mosquitoes resting on treated walls after a blood meal pick up a lethal insecticide dose.

Why the other options are wrong:

- B, cholera: water-borne, controlled by safe water and sanitation.
- C, tuberculosis: droplet spread, controlled by treatment and ventilation.
- D, leprosy: prolonged human contact, controlled by multidrug therapy.

Final Answer: Malaria $\Rightarrow$

Answer: (A) [Go Back to Q12](#)



Q13.

Solution

Concept – sterilisation vs disinfection: Killing spores is the dividing line.

Step 1 – classify autoclaving: Moist heat under pressure (typically 121°C at 15 psi for 15 minutes) destroys all microbes including bacterial spores, so it is **sterilisation**.

Step 2 – application: Autoclaving is the standard for surgical instruments and dressings.

Why the other options are wrong:

- A, disinfection: kills vegetative organisms but spares spores.
- C, antiseptics: applied to living skin, not instruments.
- D, pasteurisation: mild heat that reduces, but does not eliminate, all organisms.

Final Answer: Sterilisation ⇒ **B**

Answer: (B) [Go Back to Q13](#)

Q14.

Solution

Concept – mass-casualty triage colours: Tag colour signals treatment priority.

Step 1 – identify X: The **red** tag marks a victim with a life-threatening but salvageable injury who needs immediate intervention.

Step 2 – order of care: Red is treated first, then yellow (delayed), then green (minor); black is dead or expectant.

Why the other options are wrong:

- A, green: minor, walking wounded, lowest priority.
- B, yellow: serious but can safely wait a short time.
- D, black: no treatment; dead or beyond salvage.

Final Answer: Red tag ⇒ **C**

Answer: (C) [Go Back to Q14](#)



Q15.

Solution

Concept – disaster-management cycle: Each phase sits at a point in time relative to the event.

Step 1 – name the phase: Search and rescue, triage, surveillance and rapid relief carried out just after the event fall in the **response (relief) phase**.

Step 2 – sequence: The cycle runs mitigation and preparedness (before), response (during and just after), then rehabilitation and recovery (later).

Why the other options are wrong:

- A, mitigation: pre-event measures to reduce impact.
- B, preparedness: pre-event planning, training and stockpiling.
- D, rehabilitation and recovery: longer-term rebuilding after the acute phase.

Final Answer: Response (relief) phase ⇒

Answer: (C)

[Go Back to Q15](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	D	2	C	3	D	4	C	5	B
6	A	7	B	8	A	9	B	10	D
11	A	12	A	13	B	14	C	15	C

