

# INI CET Community Medicine

## Sample Paper – 5

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.

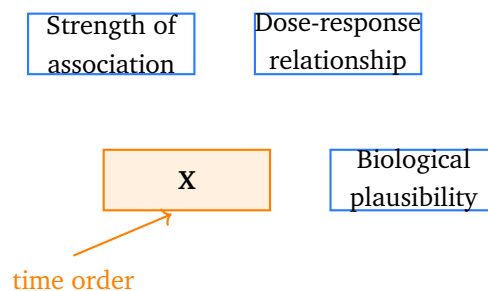
### Epidemiology and Biostatistics

- Q1.** In a case-control study of lung cancer, cases remember their past smoking habit more completely than the controls do. This systematic error is best termed:
- (A) Selection bias  
(B) Confounding  
(C) Recall bias  
(D) Lead-time bias
- Q2.** A variable that is associated with both the exposure and the outcome, and is not on the causal pathway between them, so that it distorts the observed relationship, is called a:



- (A) Effect modifier
- (B) Confounder
- (C) Mediator
- (D) Random error

**Q3.** The flow box lists Bradford Hill criteria used to judge whether an association is causal. The criterion marked X, which requires that the cause must precede the effect in time, is:



- (A) Strength of association
- (B) Biological plausibility
- (C) Dose-response relationship
- (D) Temporality

### Communicable Diseases

**Q4.** The target year set for measles and rubella elimination in the WHO South-East Asia Region, and adopted by India, is:

- (A) 2020
- (B) 2023
- (C) 2027
- (D) 2030

**Q5.** Under India's Universal Immunization Programme, the first dose of measles-rubella (MR) vaccine is scheduled to be given at:

- (A) 9 completed months of age



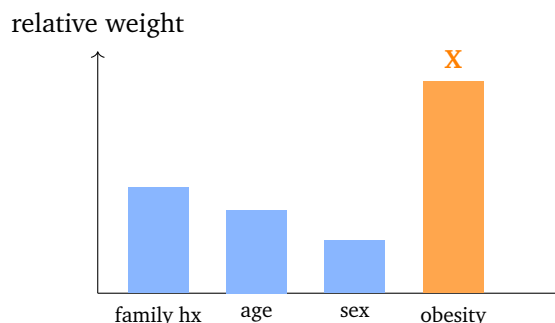
- (B) 6 weeks of age
- (C) 16 to 24 months of age
- (D) At birth

**Q6.** The pathognomonic early sign of measles, seen as small bluish-white spots on the buccal mucosa opposite the molars, is:

- (A) Forchheimer spots
- (B) Nikolsky sign
- (C) Koplik spots
- (D) Pastia lines

### Non-communicable Diseases and Nutrition

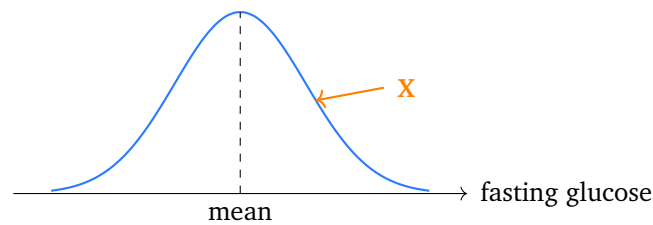
**Q7.** The bar chart shows the major risk factors for type 2 diabetes mellitus. The tallest bar, marked **X**, represents the single most important **modifiable** risk factor, which is:



- (A) Family history of diabetes
- (B) Increasing age
- (C) Male sex
- (D) Obesity (overweight)

**Q8.** The bell curve shows the distribution of fasting plasma glucose in a population. The diagnostic cut-off marked **X**, at or above which diabetes mellitus is diagnosed, corresponds to a fasting value of:





- (A) 126 mg/dL or higher
- (B) 90 mg/dL
- (C) 140 mg/dL
- (D) 200 mg/dL

### Maternal, Child Health and Family Planning

- Q9.** The under-five mortality rate is best defined as the probability of a child dying:
- (A) Within the first 7 days of life, per 1000 live births
  - (B) Within the first 28 days of life, per 1000 live births
  - (C) Between birth and exactly 5 years of age, per 1000 live births
  - (D) Between 1 and 5 years of age, per 1000 mid-year population
- Q10.** In IMNCI (Integrated Management of Neonatal and Childhood Illness), which of the following is a general danger sign in a sick young child that demands urgent referral?
- (A) Not able to drink or breastfeed
  - (B) Cough for two days
  - (C) Low-grade fever
  - (D) A single loose stool
- Q11.** In the IMNCI colour-coded classification, the colour used to mark a severe condition that needs urgent referral to hospital is:
- (A) Green
  - (B) Yellow



- (C) White
- (D) Pink (red)

### Environmental and Occupational Health

- Q12.** Prolonged occupational exposure to lead classically damages the radial nerve, producing which motor sign?
- (A) Foot drop
  - (B) Claw hand
  - (C) Wrist drop
  - (D) Winging of the scapula
- Q13.** The Threshold Limit Value (TLV) of an occupational chemical hazard, as used in occupational hygiene, refers to:
- (A) The dose that is fatal in every exposed worker
  - (B) The airborne concentration to which workers may be repeatedly exposed, day after day, without adverse effect
  - (C) The maximum permissible level of workplace noise
  - (D) The dose that is lethal to 50 percent of an exposed group (LD50)

### Health Programmes, Demography and Health Systems

- Q14.** The World Health Organization (WHO), the specialised health agency of the United Nations, came into being in which year?
- (A) 1948
  - (B) 1945
  - (C) 1919
  - (D) 1978
- Q15.** Among the 17 Sustainable Development Goals adopted in the 2030 Agenda, the goal dedicated to “Good Health and Well-being” is:



- (A) SDG 2
- (B) SDG 3
- (C) SDG 6
- (D) SDG 17



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

**Concept – information (measurement) bias:** A systematic error in how exposure or outcome is measured.

**Step 1 – read the scenario:** Cases recall past exposure more completely than controls.

**Step 2 – name it:** This differential recall of past exposure is **recall bias**, a classic problem of retrospective case-control studies.

**Why the other options are wrong:**

- A, selection bias: error in how subjects enter the study, not how they remember.
- B, confounding: a mixing of effects by a third variable.
- D, lead-time bias: an apparent survival gain from earlier screening detection.

**Final Answer:** Recall bias  $\Rightarrow$

**Answer: (C)** [Go Back to Q1](#)

**Q2.****Solution**

**Concept – confounding:** A third factor can distort an exposure-outcome link.

**Step 1 – apply the definition:** A variable linked to both exposure and outcome, and not on the causal pathway, is a **confounder**.

**Step 2 – example:** Age confounds a smoking and heart-disease association.

**Why the other options are wrong:**

- A, effect modifier: changes the strength of the true effect across strata, rather than distorting it.
- C, mediator: lies on the causal pathway.
- D, random error: chance variation, not a systematic third variable.

**Final Answer:** Confounder  $\Rightarrow$

**Answer: (B)** [Go Back to Q2](#)



Q3.

**Solution**

**Concept – Bradford Hill criteria for causation:** A set of viewpoints used to judge whether an association is causal.

**Step 1 – identify X:** The criterion that the cause must come *before* the effect in time is **temporality**.

**Step 2 – why it matters:** Temporality is the one criterion that is essential; a cause cannot follow its effect.

**Why the other options are wrong:**

- A, strength of association: a larger effect size is more suggestive, but not the time-order criterion.
- B, biological plausibility: a mechanism that fits current knowledge.
- C, dose-response relationship: risk rises with greater exposure.

**Final Answer:** Temporality ⇒ **D**

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

Q4.

**Solution**

**Concept – measles-rubella elimination:** A regional and national elimination goal.

**Step 1 – recall the target:** India adopted the WHO South-East Asia Region goal of measles and rubella elimination by **2023**.

**Step 2 – strategy:** Two-dose MR vaccination, supplementary immunisation campaigns and strong surveillance drive the effort.

**Why the other options are wrong:**

- A, 2020: an earlier measles-only target that was revised.
- C, 2027 and D, 2030: later than the adopted MR elimination year.

**Final Answer:** 2023 ⇒ **B**

**Answer: (B)** [Go Back to Q4](#)



Q5.

**Solution**

**Concept – national immunization schedule:** Each antigen has a fixed age of administration.

**Step 1 – recall MR timing:** The first MR dose is given at **9 completed months** (with the second at 16 to 24 months).

**Step 2 – rationale:** Maternal antibody wanes by about 9 months, allowing a good vaccine response.

**Why the other options are wrong:**

- B, 6 weeks: timing of the first pentavalent, OPV and rotavirus doses.
- C, 16 to 24 months: the timing of the *second* MR dose.
- D, at birth: BCG, OPV-0 and hepatitis-B birth dose.

**Final Answer:** 9 completed months  $\Rightarrow$

**Answer: (A)** [Go Back to Q5](#)

Q6.

**Solution**

**Concept – clinical marker of measles:** An early mucosal sign precedes the rash.

**Step 1 – name the sign:** **Koplik spots**, small white spots on the buccal mucosa, are pathognomonic of measles and appear before the skin rash.

**Step 2 – use:** They allow early clinical diagnosis and prompt isolation.

**Why the other options are wrong:**

- A, Forchheimer spots: palatal spots of rubella (and scarlet fever), not specific to measles.
- B, Nikolsky sign: skin sloughing in blistering disorders.
- D, Pastia lines: skin-crease lines of scarlet fever.

**Final Answer:** Koplik spots  $\Rightarrow$

**Answer: (C)** [Go Back to Q6](#)



Q7.

**Solution**

**Concept – risk factors for type 2 diabetes:** Some are modifiable, others are fixed.

**Step 1 – identify X:** The tallest bar is **obesity (overweight)**, the single most important modifiable risk factor.

**Step 2 – prevention:** Weight control, physical activity and a healthy diet cut the risk sharply.

**Why the other options are wrong:**

- A, family history and B, increasing age: real risk factors but *not modifiable*.
- C, male sex: not a strong or modifiable determinant.

**Final Answer:** Obesity (overweight)  $\Rightarrow$  D

**Answer: (D)** [Go Back to Q7](#)

Q8.

**Solution**

**Concept – diagnostic cut-off for diabetes:** Screening uses a fasting plasma glucose threshold.

**Step 1 – read X:** The cut-off in the right tail is a fasting plasma glucose of **126 mg/dL or higher** (7.0 mmol/L).

**Step 2 – context:** Values of 100 to 125 mg/dL mark impaired fasting glucose (pre-diabetes).

**Why the other options are wrong:**

- B, 90 mg/dL: a normal fasting value.
- C, 140 mg/dL: the 2-hour post-load cut-off for impaired glucose tolerance, not the fasting cut-off.
- D, 200 mg/dL: the 2-hour post-load or random-with-symptoms cut-off, not fasting.

**Final Answer:** 126 mg/dL or higher  $\Rightarrow$  A

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



Q9.

**Solution**

**Concept – child health indicators:** Each indicator has a precise age band and denominator.

**Step 1 – apply the definition:** The under-five mortality rate is the probability of dying between birth and exactly 5 years of age, per 1000 live births.

**Step 2 – significance:** It is a sensitive summary measure of overall child survival and development.

**Why the other options are wrong:**

- A, first 7 days: the early neonatal mortality rate.
- B, first 28 days: the neonatal mortality rate.
- D, 1 to 5 years per mid-year population: describes the child (1–4 year) death rate, a different measure.

**Final Answer:** Birth to exactly 5 years per 1000 live births ⇒ **C**

**Answer: (C)** [Go Back to Q9](#)

Q10.

**Solution**

**Concept – IMNCI danger signs:** General danger signs flag a child who needs urgent referral.

**Step 1 – identify the danger sign:** Not able to drink or breastfeed is a general danger sign, along with vomiting everything, convulsions and lethargy or unconsciousness.

**Step 2 – action:** Any general danger sign means urgent pre-referral treatment and referral to hospital.

**Why the other options are wrong:**

- B, cough for two days: assessed under respiratory illness, not itself a general danger sign.
- C, low-grade fever: needs assessment but is not a danger sign on its own.
- D, a single loose stool: does not indicate severe illness.

**Final Answer:** Not able to drink or breastfeed ⇒ **A**

**Answer: (A)** [Go Back to Q10](#)



Q11.

**Solution**

**Concept – IMNCI colour classification:** Three colours triage the severity of illness.

**Step 1 – match the colour:** Pink (red) classifies a severe condition needing urgent referral to hospital.

**Step 2 – the other bands:** Yellow means treat at the health facility; green means home management with advice.

**Why the other options are wrong:**

- A, green: mild illness managed at home.
- B, yellow: illness treated at the facility, not needing referral.
- C, white: not an IMNCI classification colour.

**Final Answer:** Pink (red) ⇒

**Answer: (D)** [Go Back to Q11](#)

Q12.

**Solution**

**Concept – lead as an occupational hazard:** Chronic lead exposure has a classic neurological sign.

**Step 1 – name the sign:** Lead damages the radial nerve, causing **wrist drop** from extensor weakness.

**Step 2 – other features:** Anaemia with basophilic stippling, a blue gum line and colic complete the picture.

**Why the other options are wrong:**

- A, foot drop: common peroneal nerve palsy, not the classic lead sign.
- B, claw hand: ulnar nerve lesion.
- D, winging of the scapula: long thoracic nerve (serratus anterior) palsy.

**Final Answer:** Wrist drop ⇒

**Answer: (C)** [Go Back to Q12](#)



Q13.

**Solution**

**Concept – Threshold Limit Value (TLV):** An occupational-hygiene exposure limit.

**Step 1 – apply the definition:** The TLV is the **airborne concentration to which workers may be repeatedly exposed, day after day, without adverse effect.**

**Step 2 – context:** Such exposure limits, together with ILO conventions on occupational safety, guide workplace protection.

**Why the other options are wrong:**

- A, always fatal dose: describes a lethal dose, not a safe working limit.
- C, permissible noise level: a separate physical-hazard standard.
- D, LD50: the dose lethal to half of a test group, a toxicity measure.

**Final Answer:** Airborne concentration safe on repeated exposure  $\Rightarrow$  **B**

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

Q14.

**Solution**

**Concept – the World Health Organization:** A UN specialised agency for health.

**Step 1 – recall the year:** The WHO came into force on 7 April **1948**, a date marked each year as World Health Day.

**Step 2 – role:** It sets international health norms, coordinates disease control and supports member-state health systems.

**Why the other options are wrong:**

- B, 1945: the year the United Nations itself was founded.
- C, 1919: the founding of the earlier Health Organisation of the League of Nations.
- D, 1978: the year of the Alma-Ata Declaration on primary health care.

**Final Answer:** 1948  $\Rightarrow$  **A**

**Answer: (A)** [Go Back to Q14](#)



Q15.

**Solution**

**Concept – Sustainable Development Goals:** Seventeen goals of the 2030 Agenda, adopted in 2015.

**Step 1 – match the health goal:** The dedicated health goal, “Good Health and Well-being”, is **SDG 3**.

**Step 2 – content:** Its targets cover maternal and child mortality, communicable and non-communicable diseases, and universal health coverage.

**Why the other options are wrong:**

- A, SDG 2: Zero Hunger.
- C, SDG 6: Clean Water and Sanitation.
- D, SDG 17: Partnerships for the Goals.

**Final Answer:** SDG 3  $\Rightarrow$  **B**

**Answer: (B)** [Go Back to Q15](#)



**Answer Key**

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

