

INI CET Community Medicine

Sample Paper – 4

Duration: 14 Minutes

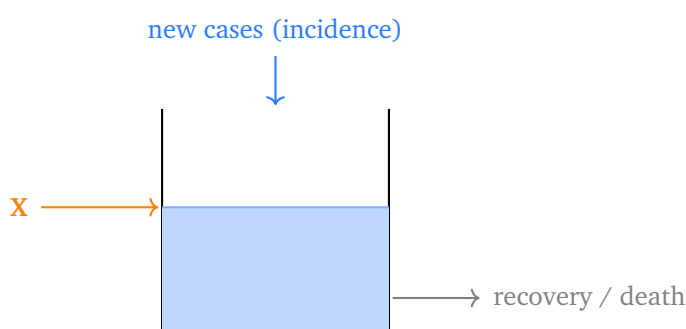
Maximum Marks: 15

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, applying epidemiology, biostatistics and national health-programme knowledge.
- 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 tank diagram models a disease in a community: new cases flow in at the top while cases leave at the bottom by recovery or death. The standing water level (marked X) that this analogy represents is:



- (A) Incidence
- (B) Attack rate
- (C) Case fatality rate
- (D) Prevalence

Q2. When the incidence and the mean duration of a disease are both stable over time, which expression correctly relates prevalence (P), incidence (I) and mean duration (D)?

- (A) $P = I \times D$
- (B) $P = I / D$
- (C) $I = P \times D$
- (D) $P = I + D$

Q3. Which of the following measures is a ratio (one quantity divided by a separate, non-overlapping quantity), rather than a rate or a proportion?

- (A) Incidence rate
- (B) Sex ratio
- (C) Case fatality rate
- (D) Point prevalence

Communicable Diseases

Q4. Which of the following is NOT an established route of HIV transmission?

- (A) Unprotected sexual contact
- (B) Sharing of contaminated needles and syringes
- (C) Bite of a mosquito that has fed on an infected person
- (D) Mother to child during pregnancy, delivery or breastfeeding

Q5. The “window period” in HIV infection is the interval during which:

- (A) The person is infected but is neither infectious nor detectable



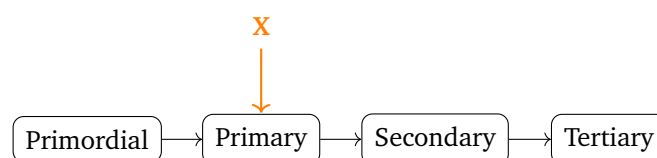
- (B) CD4 counts stay normal and the person remains asymptomatic for years
- (C) The person is infected and infectious, yet routine antibody tests are still negative
- (D) The virus becomes undetectable after successful antiretroviral therapy

Q6. Under India's NACO-run PPTCT (Prevention of Parent-to-Child Transmission) programme, the recommended antiretroviral approach for an HIV-positive pregnant woman is:

- (A) Lifelong triple-drug ART started immediately, irrespective of the CD4 count
- (B) A single dose of nevirapine given to the mother only at the onset of labour
- (C) No treatment until the CD4 count falls below 200 cells/microlitre
- (D) Zidovudine given to the newborn alone, with nothing for the mother

Non-communicable Diseases and Nutrition

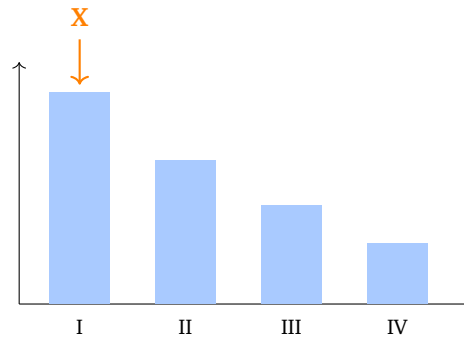
Q7. The flow diagram shows the levels of prevention along the natural history of disease. Advising salt reduction and regular exercise for a healthy adult who has a family history of hypertension, before any disease has appeared, corresponds to the step marked X:



- (A) Primordial prevention
- (B) Primary prevention
- (C) Secondary prevention
- (D) Tertiary prevention



- Q8.** The bar chart ranks modifiable risk factors by their contribution to cardiovascular disease. The tallest bar (marked X) stands for the single most important modifiable risk factor for both coronary heart disease and stroke worldwide:



- (A) Diabetes mellitus
- (B) Raised blood pressure (hypertension)
- (C) Physical inactivity
- (D) Excess alcohol intake

Maternal, Child Health and Family Planning

- Q9.** Under India's Reproductive and Child Health programme, the recommended minimum number of antenatal care visits for a normal, uncomplicated pregnancy is:
- (A) 4
 - (B) 8
 - (C) 2
 - (D) 1
- Q10.** The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) guarantees pregnant women:
- (A) A fixed-day, free, assured antenatal check-up on the 9th of every month in the second and third trimesters
 - (B) Free institutional delivery and cashless transport, but no antenatal component



- (C) Routine immunisation of the newborn only
- (D) Family planning counselling directed at male partners

Q11. Which of the following, detected at an antenatal visit, would classify the pregnancy as “high risk”?

- (A) Maternal age of 22 years
- (B) A second pregnancy (gravida 2) with a healthy first child
- (C) Maternal height of 160 cm
- (D) Bad obstetric history with a previous stillbirth

Environmental and Occupational Health

Q12. Byssinosis, an occupational lung disease in which chest tightness is characteristically worst on the first day back at work (“Monday fever”), is caused by chronic inhalation of:

- (A) Free silica dust
- (B) Asbestos fibres
- (C) Coal dust
- (D) Cotton, flax or hemp (textile) fibre dust

Q13. Which occupational lung disease carries a markedly increased risk of malignant mesothelioma and bronchogenic carcinoma?

- (A) Silicosis
- (B) Asbestosis
- (C) Byssinosis
- (D) Coal-worker’s pneumoconiosis

Health Programmes, Demography and Health Systems

Q14. The committee whose 1946 report laid the foundation of India’s primary health centre system and recommended the integration of preventive and curative services was the:



- (A) Mudaliar Committee
- (B) Kartar Singh Committee
- (C) Bhore Committee (Health Survey and Development Committee)
- (D) Chadah Committee

Q15. Under the National Health Mission, the community-level female volunteer who serves as the first port of call and the link between the community and the public health system is the:

- (A) Auxiliary Nurse Midwife (ANM)
- (B) Multipurpose Health Worker (male)
- (C) Accredited Social Health Activist (ASHA)
- (D) Anganwadi Worker



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

Concept – the tank (reservoir) analogy: Disease frequency in a community behaves like water in a tank.

Step 1 – read the inflow: New cases entering at the top represent the **incidence** (new cases per population per time).

Step 2 – read the outflow: Cases leaving at the bottom represent recovery and death.

Step 3 – read the level X: The standing water level is the pool of existing cases at a point in time, which is the **prevalence**.

Why the other options are wrong:

- A, incidence: this is the inflow, not the level.
- B, attack rate: an incidence measure used in epidemics.
- C, case fatality rate: part of the outflow, deaths among cases.

Final Answer: Prevalence $\Rightarrow$ D

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

Q2.**Solution**

Concept – prevalence, incidence and duration: The three are linked whenever the situation is in a steady state.

Step 1 – state the relationship: When incidence (I) and mean duration (D) are stable, $P = I \times D$.

Step 2 – interpret it: A disease that is either frequent (high I) or long-lasting (high D) builds up a large pool of cases (high P).

Step 3 – apply it: A short, rapidly fatal or rapidly cured disease has a low prevalence even if its incidence is high.

Why the other options are wrong:

- B and D, $P = I / D$ and $P = I + D$: not the steady-state relationship.
- C, $I = P \times D$: an incorrect rearrangement; the correct rearrangement is $I = P / D$.



Final Answer: $P = I \times D \Rightarrow$ A

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

Q3.

Solution

Concept – rate vs ratio vs proportion: The three differ in how numerator and denominator relate.

Step 1 – define a ratio: A ratio divides one quantity by a separate quantity, where the numerator is NOT part of the denominator.

Step 2 – test the sex ratio: The **sex ratio** is the number of females per 1000 males; males are not counted in the numerator, so it is a true ratio.

Step 3 – contrast a proportion: In a proportion the numerator is included in the denominator (e.g. case fatality rate = deaths among cases).

Why the other options are wrong:

- A, incidence rate: a rate, with a time dimension in the denominator.
- C, case fatality rate: a proportion (deaths are part of all cases).
- D, point prevalence: a proportion of the population that is diseased.

Final Answer: Sex ratio $\Rightarrow$ B

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

Q4.

Solution

Concept – routes of HIV spread: HIV needs body fluids with a high viral load to pass between people.

Step 1 – list the true routes: Sexual contact, contaminated blood or needles, and mother-to-child (vertical) transmission all spread HIV.

Step 2 – test the mosquito: HIV does not replicate in the mosquito and is not injected during a bite, so **mosquito bites do not transmit HIV**.

Why the other options are wrong:

- A, sexual contact: the commonest route in India.
- B, contaminated needles: seen in injecting drug users and unsafe injections.
- D, mother to child: occurs in pregnancy, delivery and breastfeeding.



Final Answer: Mosquito bites $\Rightarrow$

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

Q5.

Solution

Concept – the window period: This is the early gap between infection and a positive test.

Step 1 – define it: The window period is the time after infection during which the virus is present and the person is **infectious, but antibody tests are still negative**.

Step 2 – clinical importance: Blood donated in this period can transmit HIV despite a negative antibody screen, which is why nucleic-acid testing shortens the risk.

Why the other options are wrong:

- A, not infectious: wrong; the person is infectious during the window.
- B, long asymptomatic phase with normal CD4: describes clinical latency, not the window.
- D, undetectable on ART: describes viral suppression by treatment.

Final Answer: Infected and infectious but antibody-negative $\Rightarrow$

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

Q6.

Solution

Concept – PPTCT under NACO: India follows a “treat all” policy to protect mother and baby.

Step 1 – state the regimen: Every HIV-positive pregnant woman is started on **lifelong triple-drug ART immediately, regardless of her CD4 count** (the Option B-plus approach).

Step 2 – why: Suppressing the maternal viral load throughout pregnancy, delivery and breastfeeding cuts vertical transmission to very low levels.

Why the other options are wrong:

- B, single-dose nevirapine: an obsolete regimen that risks resistance.



- C, wait for CD4 below 200: contradicts the current treat-all policy.
- D, treat only the newborn: leaves the mother's viral load untreated.

Final Answer: Lifelong triple-drug ART regardless of CD4 $\Rightarrow$ A

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

Q7.

Solution

Concept – levels of prevention: Each level acts at a different stage of the natural history of disease.

Step 1 – place the person: A healthy adult who already carries a risk factor (family history) but has no disease is at the pre-pathogenesis stage *after* risk factors exist.

Step 2 – identify X: Acting to stop disease from developing in a person who has risk factors is **primary prevention**, the step marked X.

Why the other options are wrong:

- A, primordial: prevents the risk factor from arising in the whole population, before any risk factor exists.
- C, secondary: early detection and treatment once disease has begun (e.g. screening).
- D, tertiary: limiting disability in established disease.

Final Answer: Primary prevention $\Rightarrow$ B

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

Q8.

Solution

Concept – ranking cardiovascular risk factors: The tallest bar names the leading modifiable contributor.

Step 1 – read bar X: The highest bar represents **raised blood pressure (hypertension)**, the single most important modifiable risk factor for both coronary heart disease and stroke.

Step 2 – why it leads: Hypertension is highly prevalent and its treatment produces large reductions in stroke and heart disease, so its population attributable risk is greatest.



Why the other options are wrong:

- A, diabetes: an important risk factor, but less prevalent than hypertension.
- C, physical inactivity: contributes, yet ranks below raised blood pressure.
- D, excess alcohol: a smaller contributor to overall cardiovascular burden.

Final Answer: Raised blood pressure $\Rightarrow$

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

Q9.

Solution

Concept – antenatal visit schedule: India sets a minimum number of contacts for a normal pregnancy.

Step 1 – state the number: The Reproductive and Child Health programme recommends a minimum of **4 antenatal visits**.

Step 2 – the schedule: One in the first trimester, one at 14–26 weeks, one at 28–34 weeks and one at 36 weeks to term.

Why the other options are wrong:

- B, 8: the WHO 2016 model recommends 8 contacts, but the Indian programme's minimum is 4.
- C and D, 2 and 1: too few to detect and manage complications.

Final Answer: 4 visits $\Rightarrow$

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

Q10.

Solution

Concept – PMSMA: This scheme assures a fixed-day antenatal check-up.

Step 1 – state the entitlement: PMSMA guarantees a **free, assured, comprehensive antenatal check-up on the 9th of every month** to pregnant women in the second and third trimesters.

Step 2 – the aim: It brings specialists to identify and follow high-risk pregnancies early.

Why the other options are wrong:



- B, delivery and transport only: describes JSSK, not PMSMA's antenatal focus.
- C, newborn immunisation: covered under the Universal Immunisation Programme.
- D, counselling for male partners: not the aim of PMSMA.

Final Answer: Fixed-day free antenatal check-up on the 9th ⇒ A

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

Q11.

Solution

Concept – identifying high-risk pregnancy: Certain findings mark a pregnancy needing extra care.

Step 1 – test each finding: A bad obstetric history with a previous stillbirth carries a high risk of recurrence and defines a high-risk pregnancy.

Step 2 – management: Such women need referral, closer monitoring and delivery at an equipped facility.

Why the other options are wrong:

- A, age 22 years: within the safe reproductive age range.
- B, gravida 2 with a healthy child: a normal, low-risk situation.
- C, height 160 cm: well above the short-stature cut-off (about 140–145 cm) used as a risk marker.

Final Answer: Previous stillbirth (bad obstetric history) ⇒ D

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

Q12.

Solution

Concept – occupational lung diseases by dust: Each pneumoconiosis links to a specific dust.

Step 1 – match byssinosis: Byssinosis is caused by chronic inhalation of **cotton, flax or hemp (textile) fibre dust**.

Step 2 – the clue: Chest tightness is worst on the first working day after a break (“Monday fever”), a pattern unique to byssinosis.

Why the other options are wrong:



- A, silica: causes silicosis.
- B, asbestos: causes asbestosis.
- C, coal dust: causes coal-worker's pneumoconiosis.

Final Answer: Cotton (textile) fibre dust ⇒ D

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

Q13.

Solution

Concept – occupational dust and cancer: One pneumoconiosis is strongly carcinogenic.

Step 1 – name it: Asbestosis carries a markedly raised risk of malignant mesothelioma and bronchogenic carcinoma.

Step 2 – the mechanism: Asbestos fibres are durable and act as a complete carcinogen, with risk multiplied further by smoking.

Why the other options are wrong:

- A, silicosis: raises tuberculosis risk and is a weaker lung-cancer risk, not linked to mesothelioma.
- C, byssinosis: an airway disease, not a cancer risk.
- D, coal-worker's pneumoconiosis: causes fibrosis, without the mesothelioma link.

Final Answer: Asbestosis ⇒ B

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

Q14.

Solution

Concept – landmark health committees: Each committee shaped a part of India's health system.

Step 1 – name it: The **Bhore Committee** (Health Survey and Development Committee, 1946) proposed the primary health centre model and the integration of preventive with curative care.

Step 2 – its legacy: It laid the blueprint for the three-million-plan and today's PHC network.



Why the other options are wrong:

- A, Mudaliar Committee (1962): reviewed progress and strengthened district hospitals.
- B, Kartar Singh Committee (1973): recommended the multipurpose worker scheme.
- D, Chadah Committee (1963): dealt with maintenance of the malaria programme.

Final Answer: Bhore Committee ⇒

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

Q15.

Solution

Concept – the NHM community worker: One volunteer connects the village to the health system.

Step 1 – name her: The **Accredited Social Health Activist (ASHA)** is the trained female community health volunteer who is the first port of call.

Step 2 – her role: She promotes institutional delivery, immunisation and health awareness, and links the community to the ANM and the health centre.

Why the other options are wrong:

- A, ANM: a salaried health worker at the sub-centre, not a community volunteer.
- B, male multipurpose health worker: handles field public-health tasks, not the community-link role.
- D, Anganwadi Worker: runs the ICDS centre for nutrition and pre-school care under the WCD ministry.

Final Answer: Accredited Social Health Activist (ASHA) ⇒

Answer: (C) [Go Back to Q15](#)



Answer Key

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

