Gemini 3.1 Pro Extended

Question

An example of a public-private partnership in health and disease control is:

a) Viral Hepatitis A b) Pulse polio program c) Hookworm infestation d) Plague

---

Correct Answer: b) Pulse polio program

Reasoning and Explanation:

- **The Concept:** The Pulse Polio Immunization (PPI) campaign, launched under the Worldwide Polio Eradication Initiative, is a hallmark example of a massive national health program successfully utilizing public-private partnerships (PPP) and intersectoral coordination.
- **The Partnership:** Eradicating poliomyelitis required the concerted effort of government health systems working alongside private and non-governmental organizations (such as Rotary International), international agencies (WHO, UNICEF, CDC), private healthcare practitioners, and community volunteers.
- **Programmatic Strategy:** To achieve disease eradication, the strategy relied on National Immunization Days (NIDs)—the largest public health campaigns ever conducted. Private volunteers, local influencers, and religious leaders assisted the public health infrastructure in mass social mobilization to administer the Oral Polio Vaccine (OPV) to all children under 5 years of age.
- **Exclusion of Other Options:** Viral Hepatitis A, Hookworm infestation, and Plague are simply communicable diseases and infestations. The Pulse Polio program is the only operational disease control program among the given choices.

Gemini 3.1 Pro Extended

Question

Health of travelers is related to the term:

a) Ergonomics b) Emporiatrics c) Eugenics d) Euthenics

Correct Answer: b) Emporiatrics

Reasoning and Explanation:

- **Emporiatrics:** This is the specific scientific term coined for the **health of travelers**. It encompasses health advice, immunizations, and chemoprophylaxis for international travelers. It addresses the unique physical stressors of travel (e.g., crowding, climate and time zone changes, long transit hours, disrupted eating habits) and mitigates the risk of exposure to diseases like malaria, giardiasis, dengue, and viral hepatitis.
- **Ergonomics:** Also known as human engineering, this is a discipline of occupational health that means "fitting the job to the worker." It aims to achieve the best mutual adjustment between humans and their work environment for improved efficiency and well-being.
- **Eugenics:** Proposed by Francis Galton, this is the science that aims to improve the genetic endowment of the human population through selective methods (positive and negative eugenics).
- **Euthenics:** This science focuses on human improvement through environmental manipulation. It involves altering external factors—such as education, sanitation, and housing—to allow the human genotype to express its full potential.

Gemini 3.1 Pro Extended

Question

The regional office of WHO (SE Asia) is located at:

a) Delhi b) Nagpur c) Hyderabad d) Haryana

Correct Answer: a) Delhi

Reasoning and Explanation:

- **Location:** The headquarters of the South East Asia Regional Office (SEARO) of the World Health Organization (WHO) is located in New Delhi, India.
- **Official Address:** The specific location of this regional headquarters is the World Health House, Indraprastha Estate, New Delhi.
- **Purpose and Function:** The WHO established six regional organizations globally to address the specific health needs of different geographical areas. SEARO acts as the directing and coordinating authority for international health work in the South East Asia Region, playing a crucial role in planning, reviewing, and implementing WHO health policies and programs.

Gemini 3.1 Pro Extended

Question

The process of sorting out victims of disaster on a priority base is:

a) Rescue b) Response c) Triage d) Mitigation

Correct Answer: c) Triage

Reasoning and Explanation:

- **Definition:** Triage is the rapid classification and sorting of injured victims based on the severity of their injuries and the likelihood of their survival with prompt medical intervention.
- **Core Principle:** When mass emergencies overwhelm health facilities, the standard medical principle of "first come, first treated" is abandoned. Instead, triage is performed at the disaster site to determine transportation and treatment priority, ensuring higher priority is granted to victims whose prognosis can be dramatically improved by immediate care.
- **Triage Color Code System:** Victims are tagged into four standard categories:

Color Code	Priority Level	Description
Red	Highest Priority	Requires immediate treatment or transfer for resuscitation/surgery (e.g., massive hemorrhage).
Yellow	Medium Priority	Moderately injured but stable; may require surgery in the next 24 hours.
Green	Low Priority	Ambulatory patients with minor injuries (e.g., simple abrasions).
Black	Least Priority	Dead or moribund patients whose injuries are unsalvageable.

- **Explanation of Other Options:**
  - **Rescue:** The immediate physical action to extract victims from danger; it is not the medical sorting process.
  - **Response:** The broader, immediate post-disaster phase that encompasses search, rescue, first aid, and triage combined.
  - **Mitigation:** Pre-disaster measures designed to prevent hazards or lessen their effects (e.g., enforcing building codes, appropriate land-use planning).

Question

An example of a behavioral disorder is:

a) Hypertension b) Duodenal ulcer c) Aggressiveness d) Coronary artery disease

---

Correct Answer: c) Aggressiveness

Reasoning and Explanation:

- **Behavioral Disorders:** Aggressiveness is explicitly classified as a psychological and behavioral change. It is a manifestation of emotional or psychosocial hazards and often presents as an anti-social behavior.
- **Psychosomatic Disorders (Exclusion of other options):** Hypertension, duodenal (peptic) ulcer, and coronary artery disease are classified as **psychosomatic** (or psychosocial) illnesses, not behavioral disorders.
    - *Psychosomatic illnesses* are conditions where "the mind acts on the body." They represent physical or physiological changes that are precipitated, aggravated, or caused by disturbed emotional states, chronic stress, and psychosocial factors.

Gemini 3.1 Pro Extended

Question vi

How many samples of sputum are to be collected for microscopic examination of tuberculosis?

a) 3 samples of sputum b) 2 samples of sputum c) Early morning sample on day 2 d) A spot sample on day one

---

Correct Answer: b) 2 samples of sputum

Reasoning and Explanation:

- **Diagnostic Protocol:** According to the National Tuberculosis Elimination Programme (NTEP) guidelines, a presumptive pulmonary TB patient must submit exactly two sputum samples for sputum smear microscopy.
- **Collection Strategy:** The two specimens are collected as a "spot-early morning" or "spot-spot" combination. This typically involves one "on-the-spot" sample collected when the patient first presents to the health facility, and a second "early morning" sample collected by the patient the following day.

- **Rationale:** Examining two samples significantly increases the diagnostic yield and the chances of detecting *Mycobacterium tuberculosis* bacilli compared to a single sample.

Question vii

On sputum microscopy, 1-10 AFB per oil immersion field were reported. How do you grade the infectivity of the disease?

a) Scanty Bacilli b) 3+ c) 1+ d) 2+

Correct Answer: d) 2+

Reasoning and Explanation:

- **Grading System:** The standard method for reporting and grading sputum smears under 1000X magnification (using the Bacterial Index) is strictly defined as follows:
  - **0 AFB in 100 oil immersion fields:** Negative
  - **1–9 AFB per 100 oil immersion fields:** Scanty
  - **10–99 AFB per 100 oil immersion fields:** 1+ (Positive)
  - **1–10 AFB per 1 oil immersion field:** 2+ (Positive)
  - **> 10 AFB per 1 oil immersion field:** 3+ (Positive)
- **Interpretation:** A finding of 1-10 Acid-Fast Bacilli (AFB) per individual oil immersion field corresponds directly to a 2+ grading, indicating a high bacterial load and infectivity.

Question viii

The rapid diagnostic tools in tuberculosis is:

a) Chest X-ray b) Sputum microscopy c) CB-NAAT d) Culture sensitivity

---

Correct Answer: c) CB-NAAT

Reasoning and Explanation:

- **Rapid Molecular Diagnostic Tests:** The Cartridge Based Nucleic Acid Amplification Test (CB-NAAT), along with TrueNat, is the primary rapid molecular diagnostic tool endorsed by the NTEP.
- **Utility:** CB-NAAT is a highly sensitive automated assay that detects *Mycobacterium tuberculosis* DNA and simultaneously tests for rifampicin resistance within 2 hours. It is the test of choice for rapid definitive diagnosis.
- **Exclusion of Other Options:** Culture sensitivity is the gold standard but takes weeks (2 to 8 weeks) to yield results, so it is not "rapid." Sputum microscopy is a conventional test. A Chest X-

ray is a supportive radiological tool, not a definitive microbiological or molecular test.

Question ix

Reeta did not report to the DOTS centre after her treatment was started at the nearby DOTS centre for two months. She is classified as a TB case of:

a) Treatment unsuccessful b) Loss to follow up c) Treatment failure d) Treatment incomplete

---

Correct Answer: b) Loss to follow up

Reasoning and Explanation:

- **Treatment Outcome Definitions:** Under the NTEP treatment outcome framework, a patient is classified as "Loss to follow-up" (a term that replaced "defaulter") if they did not start treatment or if their treatment was interrupted for **2 consecutive months or more**.
- **Case Application:** Since Reeta interrupted her DOTS treatment continuously for exactly two months, she perfectly meets the epidemiological criteria for a Loss to follow-up case.
- **Exclusion of Other Options:** "Treatment failure" specifically applies to a patient whose sputum smear or culture is positive at month 5 or later during the course of treatment.

Question x

Pick the wrong statement about social factors in the transmission of tuberculosis:

a) Poor housing b) Indoor air pollution c) Under nutrition d) Over crowding

---

Correct Answer: b) Indoor air pollution

Reasoning and Explanation:

- **Social Factors of TB:** Tuberculosis is famously described as a "social disease with medical aspects." The classic non-medical social factors that facilitate the occurrence and transmission of TB in a community include poverty, poor housing, overcrowding, population explosion, lack of education, and undernutrition (which is rooted in social and economic deprivation).
- **Environmental vs. Social:** While indoor air pollution (e.g., smoke from biomass fuels) undeniably increases a person's vulnerability to acute respiratory infections and TB, in the classic epidemiological triad, it is fundamentally classified as an **environmental (physical) factor** rather than a social factor. Therefore, it is the odd one out among the listed social determinants.

Question

Assertion (A): ABER (Annual Blood Examination Rate) should be less than 5%. **Reason (R):** API (Annual Parasite Incidence) depends on the number of blood slides screened for the malaria parasite.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true, R is false d) A is false, R is true

---

Correct Answer: d) A is false, R is true

Reasoning and Explanation:

- **Analysis of Assertion (A) - False:** The Annual Blood Examination Rate (ABER) is an index of operational efficiency in malaria surveillance. According to the National Vector Borne Disease Control Programme (NVBDCP) guidelines, the operational target is to screen at least 10% of the population annually (i.e., ABER ≥ 10%), particularly in high-risk areas. Therefore, stating that ABER should be less than 5% is entirely incorrect.
- **Analysis of Reason (R) - True:** The Annual Parasite Incidence (API) is a sophisticated measure of malaria incidence in a community, and it fundamentally depends upon the annual blood collection and examination rates. A sufficient number of blood slides must be systematically obtained and examined for the malaria parasite to accurately calculate the API. If the ABER is low or inadequate, the API will falsely appear low and fail to reveal the true epidemiological picture. Thus, the reason statement is factually and scientifically accurate.

Gemini 3.1 Pro Extended

Question

Assertion (A): Man is a dead end host in Japanese encephalitis disease. **Reason (R):** Cattles and Buffaloes act as mosquito attractants.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true, R is false d) A is false, R is true

---

Correct Answer: b) Both A and R are true and R is not the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** In the transmission cycle of Japanese Encephalitis (JE), humans are incidental "dead-end" hosts. The disease is transmitted to humans by the bite of infected mosquitoes, but humans do not develop sufficient viremia to infect feeding mosquitoes

back. Because they cannot pass the virus back to the vector, and man-to-man transmission has not been recorded, humans do not contribute to the ongoing transmission cycle.

- **Analysis of Reason (R) - True:** Cattle and buffaloes can be infected with the JE virus. While they are not the natural hosts or "amplifier" hosts for the virus (unlike pigs and Ardeid birds), they play a distinct epidemiological role by acting as "mosquito attractants" in the environment.
- **Conclusion:** Both statements are independently factual. However, the fact that cattle and buffaloes act as mosquito attractants does not biologically or epidemiologically explain *why* humans are dead-end hosts. Therefore, while both statements are true, the reason is not the correct explanation for the assertion.

Gemini 3.1 Pro Extended

Question

Assertion (A): All children of a boarding school are treated for scabies infestations. **Reason (R):** Cyclops is the intermediate host in scabies.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true, R is false d) A is false, R is true

---

Correct Answer: c) A is true, R is false

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** In the control and management of scabies within a closed community, such as a boarding school or household, the standard epidemiological protocol is **Blanket treatment**. It is essential to treat all residents simultaneously, whether or not they appear to be infested, to effectively halt the continuous chain of transmission and prevent reinfection.
- **Analysis of Reason (R) - False:** Scabies is caused by the human itch mite (*Sarcoptes scabiei*), an ectoparasite that directly burrows into the epidermis. It is transmitted predominantly via direct skin-to-skin contact or through contaminated clothes and bedding, and does **not** involve any intermediate host. Cyclops (water flea) serves as the intermediate host for Guinea-worm disease (Dracunculiasis) and the fish tapeworm (*Diphyllobothrium latum*), not scabies.

Gemini 3.1 Pro Extended

Question

Assertion (A): Child health is a component of the 5x5 matrix for RMNCH+A. **Reason (R):** Immunisation is a specific protective measure.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true, R is false d) A is false, R is true

---

Correct Answer: b) Both A and R are true and R is not the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** The RMNCH+A strategy is based on providing comprehensive care through a "continuum of care" and life cycle approach. It utilizes a 5x5 matrix that identifies high-impact interventions across five thematic areas (pillars): Reproductive, Maternal, Newborn, **Child**, and Adolescent Health. Therefore, Child Health is indeed a core component of this matrix.
- **Analysis of Reason (R) - True:** Under the levels of disease prevention, specific protection is a well-established mode of intervention for primary prevention. Immunization (along with chemoprophylaxis and specific nutrient supplementation) is a classic example of a specific protective measure designed to protect a susceptible host from specific infections before the onset of disease.
- **Conclusion:** Both statements are independently accurate facts in Community Medicine. However, the programmatic inclusion of "Child Health" as a thematic pillar in the RMNCH+A strategy is due to the life cycle approach to healthcare, not simply because immunization is classified as a specific protective measure. Therefore, while both statements are true, the reason does not correctly explain the assertion.

Gemini 3.1 Pro Extended

Question

Assertion (A): Consumption of iodized salt prevents goitre. **Reason (R):** Consumption of vitamin A rich food reduces bitots spots.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true, R is false d) A is false, R is true

---

Correct Answer: b) Both A and R are true and R is not the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** The consumption of iodized salt is the most widely used, economical, and effective prophylactic public health measure against endemic goitre and other Iodine Deficiency Disorders (IDD).

- **Analysis of Reason (R) - True:** Bitot's spots (pearly-white, foamy spots on the bulbar conjunctiva) are a specific clinical manifestation of Vitamin A deficiency. The promotion and adequate consumption of Vitamin A-rich foods (such as dark green leafy vegetables, carrots, papaya, milk, and eggs) is the standard, effective long-term intervention to reduce and prevent these ocular manifestations.
- **Conclusion:** Both statements are independently accurate public health facts describing two entirely different nutritional deficiency disorders and their specific preventive measures. However, the biological mechanism by which Vitamin A prevents Bitot's spots has no relationship to how iodine prevents goitre. Therefore, while both statements are true, the reason does not correctly explain the assertion.

Gemini 3.1 Pro Extended

Question

Registration of all pregnant women before 12 weeks is to:

1. Assess the health status of mother
2. Screen for risk factors early
3. Obtain base line information on blood pressure, hemoglobin, and weight
4. Manage risk factors and refer to FRU/district hospital

a) 3, 4 are correct b) 1, 3 are correct c) 2, 3, 4 are correct d) 1, 2, 3, 4 are correct

---

Correct Answer: d) 1, 2, 3, 4 are correct

Reasoning and Explanation:

According to standard Maternal and Child Health (MCH) and Antenatal Care (ANC) guidelines, early pregnancy detection and registration within the first trimester (12 weeks) is a critical primary responsibility. It achieves all of the stated objectives:

- **Assess the health status (Statement 1):** Allows healthcare workers to evaluate the mother's general health and detect any pre-existing or concurrent medical illnesses.
- **Screen for risk factors early (Statement 2):** The central purpose of antenatal care is risk identification—finding "high-risk" cases from the general population of expectant mothers as early as possible.
- **Obtain baseline information (Statement 3):** It is essential to record baseline vital parameters—specifically blood pressure, weight, and hemoglobin levels—to serve as a clinical reference for all future antenatal visits.

- **Manage risk factors and refer (Statement 4):** Early identification of complications enables timely and appropriate management, including prompt referral to a 24-hour Primary Health Centre (PHC), Community Health Centre (CHC), or First Referral Unit (FRU)/District Hospital when required.

Gemini 3.1 Pro Extended

Question

In case of a pet dog bite with bleeding:

1. The pet dog should be observed for 10 days
2. The wound should be washed for a minimum period of 10-15 minutes
3. No need for ARV (Anti rabies vaccine)
4. No need for RIG (Rabies immunoglobulin)

a) 1, 2, 3 and 4 are correct b) 1, 2, 3 are correct c) 2, 3 and 4 are correct d) 1 and 2 are correct

---

Correct Answer: d) 1 and 2 are correct

Reasoning and Explanation:

- **Exposure Category:** A dog bite that results in bleeding is classified as a **Category III exposure** (single or multiple transdermal bites or scratches, or contamination of mucous membranes with saliva).
- **Statement 1 (Correct):** The biting animal (if a domestic dog or cat) should be kept under observation for a period of 10 days following the bite. If the animal remains healthy and alive throughout this observation period, Post-Exposure Prophylaxis (PEP) can be modified or discontinued.
- **Statement 2 (Correct):** Prompt and adequate local treatment of the wound is the first requisite in preventing human rabies. This consists of immediate flushing and washing of the wound(s) with plenty of soap and water under a running tap for a minimum of 10 to 15 minutes to mechanically remove as much virus as possible.
- **Statements 3 and 4 (Incorrect):** According to standard guidelines for Category III bites, the patient strictly requires the administration of **both** active immunization (Anti-Rabies Vaccine, ARV) and passive immunization (Rabies Immunoglobulin, RIG). In endemic or developing countries, the vaccination status of a suspected animal (even a pet dog) should not be

considered as a reason to withhold or delay the immediate initiation of prophylaxis. Therefore, asserting that there is "no need" for ARV or RIG is incorrect.

Gemini 3.1 Pro Extended

Question

In case of latent tuberculosis infection:

1. The patient has TB bacteria that are inactive
2. Patient feels sick
3. Patient does not spread the disease
4. Patient has an abnormal chest X-ray

a) 3 only is correct b) 1, 3 are correct c) 2, 3, 4 are correct d) 1, 2, 4 are correct

---

Correct Answer: b) 1, 3 are correct

Reasoning and Explanation:

- **Statement 1 (Correct):** By definition, in a latent tuberculosis infection (LTBI), the infectious agent (*Mycobacterium tuberculosis*) lies dormant or inactive within the host. The immune system has contained the bacteria, preventing them from multiplying.
- **Statement 3 (Correct):** During this latent phase, the host does not shed the infectious agent. Because there is no active dissemination of the tubercle bacilli in respiratory secretions, the patient cannot spread the disease to others.
- **Statement 2 (Incorrect):** A person with latent tuberculosis infection is strictly asymptomatic. Because the bacteria are inactive and the disease is not clinically manifesting, the patient does not feel sick.
- **Statement 4 (Incorrect):** Since the infection is dormant without active tissue destruction or pathogenesis in the lungs, a patient with LTBI will typically have a normal chest X-ray. An abnormal chest X-ray is a diagnostic feature of *active* pulmonary tuberculosis.

Since only statements 1 and 3 correctly describe a latent tuberculosis infection, option (b) is the correct choice.

Gemini 3.1 Pro Extended

Question

Barriers to dietary preferences in children are:

1. Food availability
2. Cultural preferences of food consumed
3. Income
4. Advertising

a) 1, 3 are correct b) 1, 4 are correct c) 1, 2, 3 are correct d) 1, 2, 3, 4 are correct

---

Correct Answer: d) 1, 2, 3, 4 are correct

Reasoning and Explanation:

Healthy dietary preferences and eating habits in children are established early in life and are influenced by a complex interplay of ecological, socio-economic, and cultural determinants. All of the listed factors act as significant barriers to establishing a healthy diet:

- **Food availability (Statement 1):** Seasonal variations in food production, reliance on single-crop agriculture, and uneven distribution can lead to local food shortages and a lack of dietary diversity.
- **Cultural preferences (Statement 2):** Cultural influences have deep psychological roots. Religious customs, traditional beliefs, food taboos, and specific child-rearing practices play a massive role in shaping food habits and can restrict children from consuming certain nutritious foods.
- **Income (Statement 3):** Socio-economic status directly dictates a family's purchasing power. Poverty and limited income restrict access to adequate, nutritious food, often forcing families to prioritize quantity or cheaper, energy-dense foods over nutritional quality.
- **Advertising (Statement 4):** Television, print, and digital media heavily influence consumer demand. Aggressive marketing of fast food and ultra-processed, micronutrient-poor foods directly alters children's dietary preferences and acts as a major barrier to healthy eating, contributing to childhood obesity.

Gemini 3.1 Pro Extended

Question

The dimensions of Rashtriya Kishor Swasthya Karyakram program are:

1. Mental health
2. Nutrition

3. Substance misuse
4. Gender based violence

a) 1, 3 are correct b) 1, 4 are correct c) 1, 2, 3 are correct d) 1, 2, 3, 4 are correct

---

Correct Answer: d) 1, 2, 3, 4 are correct

Reasoning and Explanation:

- **Programme Focus:** The Rashtriya Kishor Swasthya Karyakram (RKSK) was launched in 2014 as a comprehensive Adolescent Health Programme. Its primary goal is to broaden the focus of adolescent care beyond traditional sexual and reproductive health.
- **Core Dimensions:** Under the strategic guidelines of the National Health Mission, the initiative brings into focus several key thematic dimensions and priority interventions for adolescent well-being. These explicitly include:
  - **Nutrition** (Statement 2)
  - **Mental health** (Statement 1)
  - **Substance misuse** (Statement 3)
  - **Injuries and violence**, which encompasses the prevention of **gender-based violence** (Statement 4)
  - Sexual and reproductive health
  - Non-communicable diseases (NCDs)
- **Conclusion:** Because mental health, nutrition, substance misuse, and gender-based violence are all explicitly identified as core priority areas under the RKSK strategy, all four listed statements are correct.

Gemini 3.1 Pro Extended

Question

In a day care centre a child was having measles. In the centre the children between the ages of 9-12 months can be protected against measles with measles vaccine, provided that this is given with in:

a) 1 day of exposure b) 3 days of exposure c) 5 days of exposure d) 7 days of exposure

---

Correct Answer: b) 3 days of exposure

Reasoning and Explanation:

- **Post-Exposure Prophylaxis (PEP):** Susceptible contacts over the age of 9–12 months can be protected against measles by administering the live attenuated measles vaccine, provided it is given within **3 days (72 hours)** of exposure.
- **Mechanism of Action:** This specific timeframe is effective because the incubation period of the infection induced by the vaccine is shorter (approximately 7 days) compared to the incubation period for naturally acquired wild measles (which is typically 10 days).
- **Epidemiological Significance:** Giving the vaccine within this 72-hour window allows the vaccine-induced immunity to outpace the natural disease. Because the vaccine virus multiplies and induces immunity faster, it can successfully prevent the infection or significantly modify the clinical severity of the illness.
- **Exclusion of Other Options:** Administering the vaccine beyond 3 days of exposure (such as 5 or 7 days) will not be effective, as the natural virus will have already established the infection and the vaccine will not have enough time to mount a protective immune response.

Gemini 3.1 Pro Extended

Question

Supplementary Nutrition under ICDS (Integrated Child Development Services) is given to all the following EXCEPT:

a) Children below 6 years b) Pregnant women c) Lactating mothers d) Women (15-45 years)

Correct Answer: d) Women (15-45 years)

Reasoning and Explanation:

- **Target Beneficiaries:** Under the Integrated Child Development Services (ICDS) scheme, the delivery of early childhood services includes a specific package tailored for different vulnerable groups to bridge their nutritional gap.
- **Supplementary Nutrition Recipients:** Supplementary food rations are explicitly provided to the following target groups:
  - Children below 6 years of age (specifically 6 to 72 months).
  - Pregnant women (expectant mothers).
  - Lactating mothers (nursing mothers).
  - Adolescent girls (11–18 years).
- **Services for General Women (15-45 years):** For the general category of "other women (15–45 years)" who are neither pregnant nor lactating, the ICDS package strictly provides **Nutrition and**

Health Education. The primary aim for this group is to educate them on child care, personal hygiene, and family planning; they do not receive supplementary food rations.

Gemini 3.1 Pro Extended

Question

After an epidemic of measles in a village near Taxilla, 2 children reported with history of weight loss and blindness, from corneal scarring. The most likely cause of this complication is deficiency of:

a) Vitamin K b) Vitamin D c) Vitamin A d) Vitamin C

Correct Answer: c) Vitamin A

Reasoning and Explanation:

- **Pathogenesis and Link:** A severe measles infection rapidly depletes the body's Vitamin A stores. This can precipitate an acute Vitamin A deficiency, particularly in children who are already suffering from underlying malnutrition.
- **Complications:** This acute deficiency leads to severe ocular manifestations, notably keratomalacia, which ultimately results in irreversible blindness from corneal scarring. Additionally, severe measles is frequently associated with diarrhea, vomiting, and poor appetite, leading to severe weight loss and protein-energy malnutrition (PEM).
- **Prevention and Treatment Protocol:** Because of this well-established epidemiological link, standard case management protocols mandate that all cases of severe measles must be treated immediately with massive, age-specific oral doses of Vitamin A (e.g., 2,00,000 IU for children $\geq$ 12 months) specifically to prevent corneal damage and reduce overall mortality.
- **Exclusion of Other Options:** Vitamin K deficiency leads to bleeding disorders, Vitamin D deficiency causes rickets or osteomalacia, and Vitamin C deficiency causes scurvy. None of these are responsible for corneal scarring and blindness following a measles episode.

Gemini 3.1 Pro Extended

Question

After finishing 28-pill packet of Oral Contraceptive Pills next packet should be started on:

a) Very next day b) Day 2 of menstruation c) Day 5 of menstruation d) Day 7 of menstruation

---

Correct Answer: a) Very next day

Reasoning and Explanation:

- **Composition of the 28-Pill Packet:** Under the National Family Welfare Programme, standard Combined Oral Contraceptive Pills (OCPs) such as Mala-N and Mala-D are supplied in a package of 28 pills. This consists of 21 active hormonal pills and 7 non-hormonal (ferrous fumarate/iron) tablets.
- **The Rationale:** While the *very first* ever course of oral pills is strictly started on the 5th day of the menstrual cycle, the addition of the 7 iron pills is designed specifically to cover the subsequent 7-day hormonal break when withdrawal bleeding occurs. This ensures the woman maintains a continuous, daily pill-taking habit without having to count days.
- **Continuation Rule:** Because the 7-day gap is already accounted for by consuming the 7 iron tablets, no further gap is required. Once the entire 28-pill packet is completely finished, the user must start the new packet on the **very next day** to maintain continuous hormonal suppression of ovulation and ensure seamless protection against unintended pregnancy.

Gemini 3.1 Pro Extended

Question

Classical triad of Congenital rubella syndrome includes all the following except:

a) Deafness b) Hydrocephalus c) Cataract d) Congenital heart disease

---

Correct Answer: b) Hydrocephalus

Reasoning and Explanation:

- **The Classic Triad:** The classic triad of Congenital Rubella Syndrome (CRS) consists of three primary congenital defects that frequently occur when a fetus is infected with the rubella virus *in utero*, particularly during the first trimester.
- **Components of the Triad:** The established components include:
  - **Deafness:** Specifically, sensorineural deafness.
  - **Cataracts:** Ocular abnormalities, most notably congenital cataracts (sometimes accompanied by glaucoma or retinopathy).
  - **Congenital Heart Disease:** Cardiac malformations, most commonly manifesting as patent ductus arteriosus (PDA).
- **Exclusion of Hydrocephalus:** Hydrocephalus is not a component of the classic triad. While Congenital Rubella Syndrome can be associated with other developmental and neurological

defects—such as *microcephaly* (small head size), cerebral palsy, mental retardation, and hepatosplenomegaly—hydrocephalus does not belong to the characteristic triad. Therefore, it is the correct exception.

Gemini 3.1 Pro Extended

Question vi

What is the category of animal bite wound in this patient?

a) Category I b) Category II c) Category III d) Category IV

Correct Answer: c) Category III

Reasoning and Explanation:

- **Definition:** According to the WHO standard guidelines for the classification of animal bites, a Category III exposure is defined as single or multiple transdermal bites or scratches, licks on broken skin, or contamination of mucous membranes with saliva from licks.
- **Case Application:** Because the patient has sustained "multiple bite marks with bleeding," this confirms transdermal penetration, placing it strictly in Category III. (Note: There is no Category IV in the standard rabies exposure classification).

Question vii

Which of the following is not recommended?

a) Wash the wound thoroughly b) Give the first dose of PEP with ARV (Anti rabies vaccine) c) Infiltration of the wound with ARV (Anti rabies vaccine) d) Start antibiotics

---

Correct Answer: c) Infiltration of the wound with ARV (Anti rabies vaccine)

Reasoning and Explanation:

- **Wound Infiltration Protocol:** For a Category III exposure, local wound infiltration is strictly done with **Rabies Immunoglobulin (RIG)**, not the Anti-Rabies Vaccine (ARV). The guidelines state that all of the RIG, or as much as anatomically possible, should be infiltrated into and around the wound to locally neutralize the virus.
- **Vaccine Administration:** The ARV is administered systemically (intramuscularly or intradermally) at a site distant from the RIG infiltration (e.g., the deltoid).
- **Other Options:** Washing the wound thoroughly for at least 15 minutes, starting the first dose of ARV, and prescribing antibiotics/anti-tetanus measures are all highly recommended, standard

PEP protocols.

Question viii

Which of the following statement is not true regarding care of rabies wound?

a) Wash the wound with running tap water for at least 15 minutes b) If the patient present late after exposure the wound has to be washed c) Suturing of the wound should be avoided. d) If suturing is needed in lacerated wounds thermal cauterization is to be done

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Correct Answer: d) If suturing is needed in lacerated wounds thermal cauterization is to be done

Reasoning and Explanation:

- **Statement d is Not True:** According to current local wound management guidelines, the use of strong chemicals or procedures like thermal cauterization is completely avoided and no longer recommended.
- **Statement a is True:** Immediate flushing and washing of the wound with plenty of soap and water under a running tap for at least 15 minutes is the most critical first step.
- **Statement b is True:** Local wound treatment is of maximal value when done immediately, but it must not be neglected even if the patient presents several hours or days late.
- **Statement c is True:** Immediate suturing should be avoided to prevent additional trauma that can push the virus deeper into the nerves. If absolutely unavoidable, loose suturing should be done 24-48 hours later, strictly under the cover of locally infiltrated RIG.

Question ix

Which of the following is not an indication for post exposure prophylaxis of Rabies?

a) Unprovoked bite by a dog b) Bite by a vaccinated dog c) Bite by cat d) Drinking milk from a rabies infected animal

---

Correct Answer: d) Drinking milk from a rabies infected animal

Reasoning and Explanation:

- **Mode of Transmission:** The rabies virus is transmitted through the saliva of infected animals via bites or scratches. Epidemiologically, the ingestion of raw meat or other tissues (which includes drinking milk) from a rabid animal is not a source of human infection and does not warrant PEP.
- **Bite by a vaccinated dog:** In endemic or developing countries like India, the vaccination status of a suspected animal should not be relied upon to withhold prophylaxis. PEP must be initiated regardless.

- **Unprovoked dog bite and cat bite:** Both dogs and cats are major hosts, and bites from either are absolute indications for starting PEP.

Question x

Calculate the dose of ERIG for this patient if the weight of the individual is 55 Kg:

a) 2200 IU b) 550 IU c) 1100 IU d) 1000 IU

Correct Answer: a) 2200 IU

Reasoning and Explanation:

- **Formula:** For passive immunization in Category III exposures, Equine Rabies Immunoglobulin (ERIG) (also known as Anti-Rabies Serum) is administered at a standard dose of **40 IU per kg** of body weight. (Human Rabies Immunoglobulin or HRIG is administered at 20 IU/kg).
- **Calculation:**
  - Patient's Weight = 55 kg
  - ERIG Dose = 55 kg × 40 IU/kg = 2200 IU.

Gemini 3.1 Pro Extended

Question

Assertion (A): Short course supplementation with zinc is recommended for every child suffering from diarrhea. **Reason (R):** Zinc supplementation significantly reduces the severity and duration of diarrhoea in children less than 5 years of age.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true, but R is false d) A is false, but R is true

---

Correct Answer: a) Both A and R are true and R is the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** According to WHO and UNICEF guidelines for the control of diarrheal diseases, a short course of zinc supplementation (typically for 10 to 14 days) is universally recommended as an essential adjunct to Oral Rehydration Therapy (ORT) for children suffering from acute diarrhea.
- **Analysis of Reason (R) - True:** The primary clinical rationale for this protocol is that providing a zinc supplement during an episode of acute diarrhea significantly reduces the severity of the

illness (stools become less frequent and less watery) and shortens the overall duration of the episode. Furthermore, it helps lower the incidence of subsequent diarrheal episodes in the following 2 to 3 months.

- **Conclusion:** Both statements are independently accurate. Because the documented reduction in disease severity, duration, and subsequent child mortality is the exact scientific basis for the public health recommendation, the reason perfectly explains the assertion.

Standard Dosage Guidelines:

- **Infants (< 6 months):** 10 mg of elemental zinc per day for a total period of 14 days.
- **Children (> 6 months to 5 years):** 20 mg of elemental zinc per day for a total period of 14 days.

Gemini 3.1 Pro Extended

Question

Assertion (A): Nipah virus is an emerging infectious disease. **Reason (R):** Nipah virus can sometimes cause serious illness among humans.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true, but R is false d) A is false, but R is true

---

Correct Answer: b) Both A and R are true but R is not the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** Nipah virus is explicitly classified as an emerging infectious zoonotic disease (caused by a virus of the family *Paramyxoviridae*). It was first isolated relatively recently, in 1999, during an outbreak in Malaysia and Singapore. By definition, emerging infectious diseases are those whose incidence in humans has increased during the last two decades, are newly appearing, or are spreading to new geographical areas.
- **Analysis of Reason (R) - True:** It is factually correct that Nipah virus can cause serious illness in humans. Clinical manifestations range from severe acute respiratory infection to highly fatal encephalitis, with an estimated case fatality rate of 40% to 75%.
- **Conclusion:** Both statements are independently true facts. However, a disease is not epidemiologically categorized as "emerging" simply because it causes a "serious illness" (many ancient, well-established endemic diseases also cause severe illness). It is an emerging disease due to its recent identification and geographic spread. Therefore, while both statements are true, the reason does not correctly explain the assertion.

Gemini 3.1 Pro Extended

Question

Assertion (A): ASHA workers is an Accredited Social Health Activist. **Reason (R):** ASHA workers need to have a degree in medico social work.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true, but R is false d) A is false, but R is true

---

Correct Answer: c) A is true, but R is false

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** ASHA explicitly stands for Accredited Social Health Activist. They are vital grassroots-level community health workers introduced under the National Rural Health Mission (NRHM) to act as an interface and bridge between the community and the public healthcare system.
- **Analysis of Reason (R) - False:** An ASHA worker does **not** require a degree in medico-social work. According to the standard selection criteria, an ASHA must simply be a resident of the local community, a woman (married, widowed, or divorced), preferably in the age group of 25 to 45 years, with a basic formal education up to the eighth or tenth class. The fundamental requirements are good communication skills, leadership qualities, and community acceptability, rather than a professional university degree.

Gemini 3.1 Pro Extended

Question

Assertion (A): A country’s surveillance system needs to be sensitive enough to detect at least one case of AFP for every 100 000 children under 15 years even in the absence of polio. **Reason (R):** As one case of AFP per 100 000 children under 15 years is the criteria for elimination of polio.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true, but R is false d) A is false, but R is true

---

Correct Answer: c) A is true, but R is false

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** Under the guidelines for Acute Flaccid Paralysis (AFP) surveillance, it is an established epidemiological standard that a country's reporting system must be sensitive enough to detect at least one case of non-polio AFP for every 100,000 children under 15 years of age, even in the complete absence of polio.
- **Analysis of Reason (R) - False:** The benchmark of detecting 1 case of AFP per 100,000 children is strictly an indicator of **surveillance sensitivity**—it proves that the health system's reporting machinery is active, functioning correctly, and capable of detecting polio if it were to occur. It is *not* the criteria for the elimination of polio. The actual criteria for polio elimination/eradication is the complete interruption of wild poliovirus transmission and the achievement of zero indigenous cases of the disease.
- **Conclusion:** Since the target specified in the assertion is purely a measure of surveillance quality and not the epidemiological definition of disease elimination as stated in the reason, the assertion is true while the reason is false.

Gemini 3.1 Pro Extended

Question

Assertion (A): The best time to give HPV vaccination is between 9-13 years. **Reason (R):** For the HPV vaccine to work best, it is very important to get all doses before being exposed to HPV.

a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true, but R is false d) A is false, but R is true

---

Correct Answer: a) Both A and R are true and R is the correct explanation of A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** The primary target group for Human Papillomavirus (HPV) vaccination as a primary prevention measure against cervical cancer is early adolescent girls. The World Health Organization (WHO) specifically recommends vaccinating girls aged 9 to 14 years. The age bracket of 9-13 years falls perfectly within this optimal window, making the assertion epidemiologically correct.
- **Analysis of Reason (R) - True:** HPV is primarily a sexually transmitted infection. HPV vaccines work best if they are administered prior to any exposure to the virus. To achieve maximum efficacy, individuals should receive all required doses before their sexual debut, as the vaccine is highly effective in those who have not yet acquired an HPV infection.
- **Conclusion:** The specific clinical and epidemiological rationale for targeting young adolescent girls (the 9-14 years age group) is precisely to ensure that they are fully protected before the onset of sexual activity and potential exposure to the virus. Therefore, both statements are

independently true, and the reason provides the direct and correct scientific explanation for the assertion.

Gemini 3.1 Pro Extended

Question

National Mental health survey in India showed that:

1. Nearly 150 million Indians aged 13 and above are likely to be suffering from one or more mental health problems.
2. Mental health problems are comparatively more prevalent in rural areas.
3. Less than 2% has severe mental illness like psychosis or bipolar disorder.
4. The economic impact of mental health disorders is huge.

a) 1, 2, 3 and 4 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

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Correct Answer: c) 1, 3 and 4 are correct

Reasoning and Explanation:

According to the key findings of the National Mental Health Survey (NMHS) conducted in India (2015-16), the following observations were made:

- **Statement 1 (Correct):** The survey indicated that nearly 150 million Indians aged 13 and above are likely to be suffering from one or more mental health problems and are in immediate need of services.
- **Statement 2 (Incorrect):** The findings explicitly state that mental health problems are comparatively more prevalent in **urban areas** (and urban metros), not rural areas.
- **Statement 3 (Correct):** It was observed that a small proportion, less than 2%, had a severe mental illness such as psychosis or bipolar disorder.
- **Statement 4 (Correct):** The economic impact of mental disorders on families is huge. The survey highlighted a significant out-of-pocket expenditure, with the median monthly expenditure for care ranging between INR 1000 to 2500 across various conditions.

Because statements 1, 3, and 4 are factually supported by the NMHS findings while statement 2 is false, option (c) is the correct choice.

Gemini 3.1 Pro Extended

Question

Which of the following are RIGHTLY matched?

1. Kalamazoo consensus : Communication skills
2. Rule of halves : Hypertension
3. Corpulence index : Fertility measure

a) 1, 2 and 3 are correct b) 1 and 2 are correct c) 1 and 3 are correct d) 2 and 3 are correct

---

Correct Answer: b) 1 and 2 are correct

Reasoning and Explanation:

- **Pair 1 (Kalamazoo consensus : Communication skills) is RIGHTLY MATCHED:** The Kalamazoo Consensus Statement is a well-established framework in medical education that outlines the essential elements of effective physician-patient communication (such as building the relationship, gathering information, understanding the patient's perspective, and shared decision-making).
- **Pair 2 (Rule of halves : Hypertension) is RIGHTLY MATCHED:** The "Rule of halves" is a classic epidemiological concept used to illustrate the hidden burden of hypertension in a community (the "iceberg" disease phenomenon). It states that only about half of all hypertensive individuals are aware of their condition; of those aware, only half are being treated; and of those treated, only half are adequately treated/controlled.
- **Pair 3 (Corpulence index : Fertility measure) is INCORRECTLY MATCHED:** The Corpulence index is an anthropometric indicator used for the assessment and classification of **obesity** (calculated as Actual weight / Desirable weight). It is not a measure of fertility.

Therefore, only matches 1 and 2 are correct.

Gemini 3.1 Pro Extended

Question

What is the recommended timings to insert an IUCD (Intra Uterine Contraceptive Device)?

1. Within seven days of the beginning of last menstrual period or anytime during the menstrual cycle
2. Immediately or within 48 hours after delivery
3. More than 6 weeks post partum

4. After one week post partum

a) 1 and 2 are correct b) 1, 2 and 4 are correct c) 1, 2 and 3 are correct d) 1, 3 and 4 are correct

---

Correct Answer: c) 1, 2 and 3 are correct

Reasoning and Explanation:

The appropriate timing for the insertion of an Intrauterine Contraceptive Device (IUCD) is strictly defined to ensure safety, minimize complications, and rule out pregnancy:

- **Statement 1 (Correct):** The best time for IUCD insertion is during menstruation or within the first few days of the menstrual cycle (within seven days). However, it can be safely inserted *anytime* during the menstrual cycle, provided the healthcare provider is reasonably sure that the woman is not pregnant.
- **Statement 2 (Correct):** For postpartum family planning, an IUCD can be inserted safely immediately after delivery or within 48 hours of delivery (immediate postpartum insertion), provided it is done by a specially trained healthcare worker.
- **Statement 3 (Correct):** If the device is not inserted within the first 48 hours after childbirth, the procedure must be deferred and inserted only after 6 weeks postpartum (post-puerperal insertion). This delay allows for complete involution of the uterus and decreases the risk of infection.
- **Statement 4 (Incorrect):** The period between 48 hours and 6 weeks postpartum (which includes "after one week postpartum") is a recognized relative contraindication for IUCD insertion. Inserting the device during this window carries a significantly higher risk of uterine perforation and expulsion because the involuting uterus is highly vascular, soft, and fragile.

Therefore, statements 1, 2, and 3 reflect the correct medical protocols for IUCD insertion.

Gemini 3.1 Pro Extended

Question

Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Health Mission.

1. For promoting institutional delivery
2. Integrates cash assistance with delivery and post-delivery care.
3. Women are provided with absolutely free and no expense delivery, including caesarean section
4. The Yojana has identified Accredited Social Health Activist (ASHA) as an effective link between the government and pregnant women.

a) 1 and 2 are correct b) 1, 2 and 4 are correct c) 1, 2 and 3 are correct d) 1 and 4 are correct

Correct Answer: b) 1, 2 and 4 are correct

Reasoning and Explanation:

- **Statement 1 (Correct):** The primary goal of the Janani Suraksha Yojana (JSY), launched under the National Rural Health Mission (NRHM), is to reduce maternal and neonatal mortality by specifically promoting institutional deliveries among pregnant women.
- **Statement 2 (Correct):** JSY is a conditional cash transfer scheme that explicitly integrates the benefit of cash assistance with institutional care during the antenatal, delivery, and immediate post-partum (post-delivery) periods.
- **Statement 4 (Correct):** The scheme heavily relies on the Accredited Social Health Activist (ASHA) to act as an effective interface and link between the community and the public healthcare system. Under JSY, ASHAs are officially identified and provided with financial incentives (an "ASHA's Package") to mobilize, track, and escort pregnant women for institutional delivery.
- **Statement 3 (Incorrect):** The provision of "absolutely free and no expense delivery, including caesarean section" (along with free drugs, free diet, free diagnostics, and free transport) is the explicit mandate of a distinctly different scheme—the **Janani Shishu Suraksha Karyakram (JSSK)**, which was introduced later in June 2011. It is not a feature of the Janani Suraksha Yojana.

Therefore, statements 1, 2, and 4 accurately describe JSY, making option (b) the correct choice.

Gemini 3.1 Pro Extended

Question

A pregnant woman is tested positive for HIV. What is the recommendation as per PPTCT (Prevention of Parent to Child Transmission) guidelines?

1. The Woman should be initiated on a triple drug ART
2. The duration of Nevirapine prophylaxis to HIV exposed infant should be a minimum of 4 weeks
3. Early cord clamping during labor is advised
4. EBF (Exclusive Breast Feeding) for the first 6 months of life is recommended

a) 1 and 2 are correct b) 1 and 3 are correct c) 1, 3 and 4 are correct d) 1, 2 and 3 are correct

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Correct Answer: c) 1, 3 and 4 are correct

Reasoning and Explanation:

According to the modalities for the Prevention of Parent to Child Transmission (PPTCT) under the National AIDS Control Programme (NACP):

- **Statement 1 (Correct):** The programme mandates that all HIV-positive pregnant and breastfeeding women be initiated on lifelong Antiretroviral Therapy (ART), irrespective of their CD4 count or clinical stage. Standard ART strictly consists of a highly active combination of at least three ARV drugs (triple-drug ART) from different classes to suppress viral replication.
- **Statement 3 (Correct):** Under safe delivery practices, strict strategies are emphasized to minimize the infant's exposure to maternal blood and cervicovaginal secretions during delivery. To prevent the risk of maternal-fetal blood exchange, practices like early cord clamping and avoiding invasive procedures (such as artificial rupture of membranes) are strictly advised.
- **Statement 4 (Correct):** For safe infant feeding practices, Exclusive Breastfeeding (EBF) for the first 6 months of life is highly recommended for the infant, provided it is done under the strict cover of maternal ART.
- **Statement 2 (Incorrect):** As per standard guidelines, newborns of HIV-positive mothers must receive antiretroviral prophylaxis (usually Nevirapine or NVP) starting immediately after birth. However, the standard recommended duration for this prophylaxis is a minimum of **6 weeks** (not 4 weeks) for exclusively breastfed infants.

Because statements 1, 3, and 4 accurately reflect the established PPTCT guidelines while statement 2 is factually incorrect regarding the duration, option (c) is the correct choice.

Gemini 3.1 Pro Extended

Question

Which of the following is a key objective of Integrated Disease Surveillance Programme (IDSP)?

a) Conducting routine immunization b) Strengthening laboratory capacity for disease diagnosis c) Reducing maternal mortality ratio d) Providing health insurance coverage

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Correct Answer: b) Strengthening laboratory capacity for disease diagnosis

Reasoning and Explanation:

- **Core Objective of IDSP (Option b is Correct):** The Integrated Disease Surveillance Programme (IDSP) is designed to monitor disease trends and provide early warning signals for disease outbreaks. Surveillance under IDSP is categorized into Syndromic, Presumptive, and **Confirmed** types. Because a confirmed diagnosis must be definitively established using appropriate laboratory tests, strengthening laboratory capacity is a core operational objective to effectively monitor and control communicable diseases.

- **Exclusion of Other Options:**
  - **Option a (Incorrect):** Conducting routine immunization is the explicit mandate of the **Universal Immunization Programme (UIP)** and **Mission Indradhanush**, which aim to prevent vaccine-preventable diseases.
  - **Option c (Incorrect):** Reducing the maternal mortality ratio (MMR) is the primary objective of safe motherhood and maternal health initiatives under the **National Health Mission (NHM)**, such as the **Janani Suraksha Yojana (JSY)** and **Janani Shishu Suraksha Karyakram (JSSK)**.
  - **Option d (Incorrect):** Providing health insurance coverage and financial risk protection is the specific objective of health assurance schemes like **Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** and the **Employees' State Insurance (ESI) Scheme**, not a disease surveillance programme.

Gemini 3.1 Pro Extended

Question

In urban health, the term "slum population" generally refers to:

a) People with chronic illnesses in urban settings b) Residents with inadequate housing, water, and sanitation facilities c) Migrants from rural to urban areas d) Unemployed individuals living in cities

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Correct Answer: b) Residents with inadequate housing, water, and sanitation facilities

Reasoning and Explanation:

- **Definition by Living Conditions (Option b is Correct):** In the context of urban public health and environmental sanitation, "slum populations" are primarily defined by their severe physical, environmental, and infrastructural deficits. These marginalized settlements are characterized by substandard housing, overcrowding, unsafe drinking water, and poor environmental sanitation (such as the lack of proper sewage and waste disposal).
- **Public Health Focus:** Initiatives like the National Urban Health Mission (NUHM) specifically target these populations because rapid, unplanned urbanization leaves the urban poor residing in these areas unable to access or afford basic health amenities and safe living conditions.
- **Exclusion of Other Options:**
  - While rural-to-urban migration (Option c) and unemployment or poverty (Option d) are major driving forces behind the *creation* and growth of slums, the epidemiological definition focuses on the physical and sanitary deprivation of the settlement itself, not just the geographical origin or employment status of the residents.

- Option a (chronic illnesses) is incorrect as a defining characteristic; while poor living conditions exacerbate health issues, the definition rests on the infrastructural environment.

Gemini 3.1 Pro Extended

Question

Which is the most appropriate example of primary prevention in mental health?

a) Early diagnosis of depression b) Rehabilitation of schizophrenia patients c) Promoting stress management techniques among school students d) Ensuring compliance with antipsychotic medications

---

Correct Answer: c) Promoting stress management techniques among school students

Reasoning and Explanation:

- **Concept of Primary Prevention (Option c is Correct):** According to the epidemiological model of disease control, primary prevention is defined as action taken *prior* to the onset of disease, which removes the possibility that a disease will ever occur. Promoting stress management techniques (such as yoga, meditation, and life skills) among healthy school students is a direct example of health promotion. It operates in the pre-pathogenesis phase, equipping young individuals with coping skills to handle life's stresses, thereby preventing the emergence of mental health disorders before they begin.
- **Exclusion of Other Options:**
  - **Option a (Incorrect):** Early diagnosis (and prompt treatment) of depression is a classic example of **Secondary Prevention**, which aims to halt the progress of a disease at its incipient stage.
  - **Option b (Incorrect):** Rehabilitation of schizophrenia patients is the core component of **Tertiary Prevention**, which aims to reduce or limit impairments, prevent handicaps, and restore functional ability after the disease process has advanced.
  - **Option d (Incorrect):** Ensuring compliance with antipsychotic medications is a crucial aspect of ongoing treatment and disability limitation, which falls under Secondary or Tertiary Prevention depending on the stage of the disease.

Gemini 3.1 Pro Extended

Question iv

Which factor is most critical in disaster preparedness?

a) Distribution of food during disasters b) Community awareness and training c) Deployment of healthcare workers after disasters d) Establishment of temporary shelters

---

Correct Answer: b) Community awareness and training

Reasoning and Explanation:

- **Cornerstone of Preparedness (Option b is Correct):** According to the principles of Disaster Management, community members, resources, organizations, and local administration form the absolute cornerstone of an emergency preparedness program. Developing public education programs and organizing disaster simulation exercises are critical pre-disaster capacity-building activities.
- **Role of the Community:** The primary rationale for emphasizing community awareness and training is that the first responders to any emergency almost always come from within the affected community itself. When transport and communication lines are disrupted by an event, external emergency responses may not arrive for hours or days, making local community capacity crucial for immediate survival and rescue.
- **Exclusion of Other Options:**
  - **Options a, c, and d (Incorrect):** The distribution of food, deployment of healthcare workers, and the establishment of temporary shelters are operational activities that strictly belong to the **Disaster Response or Relief phase**. These actions occur *after* the disaster has struck, whereas disaster preparedness consists of proactive activities implemented *before* a disaster to mitigate its impact.

Gemini 3.1 Pro Extended

Question v

High risk mother include all EXCEPT:

a) Primigravida with height 150 cm b) Twin pregnancy c) Anemia d) Treatment for infertility

---

Correct Answer: a) Primigravida with height 150 cm

Reasoning and Explanation:

- **Concept of Risk Approach:** In Maternal and Child Health (MCH) and Antenatal Care (ANC), the "risk approach" is a vital managerial tool used to identify high-risk cases from a general

population of pregnant women. This ensures they receive specialized attention, extra care, and timely referral to hospital facilities to prevent maternal and perinatal mortality.

- **High-Risk Pregnancy Criteria:** According to standard obstetric and preventive medicine guidelines, specific conditions that classify a pregnant woman as a high-risk mother include:
  - **Short-statured primi:** Explicitly defined as a primigravida with a height of **140 cm and below**.
  - **Anemia:** A universally recognized high-risk condition during pregnancy.
  - **Multiple pregnancies:** Such as twins, as well as conditions like hydramnios.
  - **Treatment for infertility:** A history of infertility treatment automatically flags the pregnancy as high-risk.
  - Other factors include: Elderly primi (30 years and over), malpresentations, pre-eclampsia, history of still-births or spontaneous abortions, and underlying systemic diseases.
- **Conclusion:** Options (b) Twin pregnancy, (c) Anemia, and (d) Treatment for infertility are strictly classified as high-risk pregnancy factors. Because the established clinical threshold for risk based on short stature is 140 cm and below, a primigravida with a height of 150 cm does not meet the criteria for being high-risk based on height alone. Therefore, option (a) is the correct exception.

Gemini 3.1 Pro Extended

Clinical Scenario: A 28-year-old woman presents to a primary health center with complaints of fever, headache, and body ache for the past five days. On examination, she has a high-grade fever, mild hypotension, and a maculopapular rash. She lives in an urban slum with poor drainage systems and reports an increase in mosquito density in her area over the past two weeks. Laboratory tests show thrombocytopenia and mildly elevated liver enzymes.

Question vi

What is the most likely diagnosis for the patient?

a) Dengue fever b) Malaria c) Leptospirosis d) Typhoid fever

Correct Answer: a) Dengue fever

Reasoning and Explanation:

- **Clinical Presentation:** The characteristic triad of a high-grade fever, intense headache, severe body ache (myalgia, often termed "breakbone fever"), and a maculopapular rash strongly aligns with the clinical criteria for Dengue syndrome.

- **Laboratory Findings:** The presence of thrombocytopenia (a low platelet count, typically <150,000 cells/mm³) and mildly elevated liver enzymes (AST/ALT) are hallmark laboratory changes seen during the acute course of a dengue infection.
- **Epidemiological Factors:** The patient's residence in an urban slum with poor drainage and high mosquito density points directly to the *Aedes aegypti* mosquito. This highly domesticated urban vector breeds in artificial collections of water and is responsible for transmitting the Dengue virus.
- **Exclusion of Other Options:** Malaria classically presents with cold, hot, and sweating stages; Typhoid fever is a water-borne disease characterized by a step-ladder fever and GI symptoms; Leptospirosis is associated with contaminated water/rodent exposure and typically presents with severe calf muscle tenderness and jaundice.

Question vii

Which test is more specific for confirming the diagnosis of this condition?

a) Peripheral blood smear b) NS1 antigen test c) Widal test d) Liver function tests

---

Correct Answer: b) NS1 antigen test

Reasoning and Explanation:

- **Diagnostic Utility:** The ELISA-based NS1 antigen test is a simple, highly sensitive, and highly specific diagnostic tool for the early detection of acute dengue infections. It detects the highly conserved Dengue NS1 glycoprotein that is abundant in the serum during the early viremic stage (from the 1st to the 5th day of illness), which perfectly matches this patient's 5-day history.
- **Exclusion of Other Options:** A peripheral blood smear is the standard diagnostic tool for Malaria; the Widal test is a serological test used for diagnosing Typhoid fever; and Liver function tests are non-specific biochemical markers that, while helpful in assessing organ involvement, cannot confirm the exact etiology of the viral infection.

Question viii

What is the most critical step in preventing the spread of the likely disease in this community?

a) Fogging with insecticides b) Increasing access to clean drinking water c) Vaccination against the disease d) Distribution of oral rehydration solutions

---

Correct Answer: a) Fogging with insecticides

Reasoning and Explanation:

- **Outbreak Control Measure:** Because Dengue is transmitted by the *Aedes* mosquito, the most critical community-level epidemiological intervention during an active outbreak is Vector Control. Guidelines mandate the use of space spraying and fogging with ultra-low-volume (ULV) insecticides (such as malathion) as an immediate control measure to rapidly reduce the infective adult mosquito population and interrupt transmission.
- **Exclusion of Other Options:** Increasing access to clean drinking water targets water-borne diseases (e.g., Cholera, Typhoid), not mosquito-borne viruses. Routine vaccination against Dengue requires strict pre-vaccination screening for past infections and is not an immediate outbreak control tool. Distributing ORS is a clinical case-management strategy, not a primary measure for preventing community spread.

Question ix

What is the primary focus of management for this patient?

a) Antibiotic therapy b) Hydration and symptomatic care c) Blood transfusion d) High-dose corticosteroids

---

Correct Answer: b) Hydration and symptomatic care

Reasoning and Explanation:

- **Supportive Treatment:** Dengue is a viral infection with no specific antiviral cure. Therefore, the mainstay of clinical management strictly focuses on supportive care, primarily maintaining adequate hydration and managing symptoms.
- **Treatment Protocol:** Patients must be encouraged to maintain an adequate intake of Oral Rehydration Solution (ORS), fruit juices, and other fluids to replace losses from fever and prevent progression to shock due to plasma leakage. Paracetamol is the drug of choice for managing high fever and body aches.
- **Contraindications:** High-dose corticosteroids and NSAIDs (like aspirin or ibuprofen) are strictly contraindicated as they can exacerbate bleeding and aggravate gastritis. Antibiotics are ineffective against viral infections, and blood/platelet transfusions are reserved strictly for severe dengue cases with overt, massive bleeding (which is absent here).

Question x

Which level of prevention does vector control represent in this scenario?

a) Primary prevention b) Secondary prevention c) Tertiary prevention d) Quaternary prevention

---

Correct Answer: a) Primary prevention

Reasoning and Explanation:

- **Definition:** Primary prevention is defined epidemiologically as "action taken prior to the onset of disease, which removes the possibility that a disease will ever occur." It operates entirely in the pre-pathogenesis phase of the disease cycle.
- **Application:** Environmental modifications, sanitation, and the control of insects (vector control, such as fogging and anti-larval measures) are classic examples of *specific protection*. By reducing the mosquito population, vector control interrupts the chain of transmission between the vector and the susceptible human host, preventing the infection before it starts.
- **Exclusion of Other Options:** Secondary prevention involves early diagnosis and prompt treatment to halt disease progression. Tertiary prevention focuses on disability limitation and rehabilitation after the disease has advanced.

Gemini 3.1 Pro Extended

Question xi

Assertion (A): Hypertension is an iceberg disease. **Reason (R):** Around 50% of the hypertensives in the population is undiagnosed cases.

a) Both A and R are true and R explains A b) Both A and R are true but R does not explain A c) A is true but R is false d) A is false but R is true

---

Correct Answer: a) Both A and R are true and R explains A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** Epidemiologically, Hypertension is classically described as an "iceberg disease." According to the iceberg phenomenon of disease, the floating tip represents the visible clinical cases seen by physicians, while the vast submerged portion represents the hidden mass of disease (latent, inapparent, pre-symptomatic, and undiagnosed cases) present within the community.
- **Analysis of Reason (R) - True:** The statement accurately reflects the epidemiological "Rule of halves" as it applies to hypertension. This rule dictates that in a general population, only about half (50%) of hypertensive individuals are aware of their condition. Consequently, the remaining 50% constitute the undiagnosed, hidden cases.
- **Conclusion:** The massive proportion (50%) of hypertensive individuals who are entirely unaware of their condition forms the large "submerged" or hidden portion of the disease burden. Because this huge percentage of undiagnosed cases constitutes the hidden part of the iceberg, the reason

directly and scientifically explains why hypertension is classified as an iceberg disease. Therefore, both statements are true, and the Reason correctly explains the Assertion.

Gemini 3.1 Pro Extended

Question xii

Assertion (A): Maternal and child health services include family planning interventions. **Reason (R):** Family planning ensures better spacing between pregnancies, which improves maternal and child outcomes.

a) Both A and R are true and R explains A b) Both A and R are true but R does not explain A c) A is true but R is false d) A is false but R is true

---

Correct Answer: a) Both A and R are true and R explains A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** The standard scope of Maternal and Child Health (MCH) care explicitly includes family planning as a core component, alongside maternal health, child health, school health, and the care of handicapped children.
- **Analysis of Reason (R) - True:** Unregulated fertility, high parity, and short birth intervals are major risk factors leading to adverse outcomes such as low birth weight, severe maternal anemia, and high maternal and perinatal mortality. Utilizing family planning for the proper spacing of births and family limitation contributes substantially to lowering both the Infant Mortality Rate (IMR) and the Maternal Mortality Ratio (MMR).
- **Conclusion:** The primary programmatic rationale for integrating these services is that family planning has a striking, direct impact on the health and survival of both the mother and the child. Because the physiological and epidemiological benefits of birth spacing profoundly improve maternal and child outcomes, the Reason perfectly and scientifically explains why family planning is an essential component of MCH services.

Gemini 3.1 Pro Extended

Question xiii

Assertion (A): Effective disaster management requires a multi-sectoral approach. **Reason (R):** Health, education, and infrastructure sectors are independently capable of managing disasters.

a) Both A and R are true and R explains A b) Both A and R are true but R does not explain A c) A is true but R is false d) A is false but R is true

---

Correct Answer: c) A is true but R is false

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** Disaster preparedness and management are explicitly defined as ongoing multisectoral activities. Effective management depends entirely on the coordination of a variety of sectors (such as health, communication, social welfare, police and security, search and rescue, and transport) to carry out effective emergency responses and recovery strategies.
- **Analysis of Reason (R) - False:** No single sector is independently capable of managing the extensive impacts of a disaster. The very necessity of intersectoral coordination arises precisely because the components of disaster management and emergency relief cannot be handled by the health, education, or infrastructure sectors alone. Managing a disaster strictly requires combined, integrated efforts.
- **Conclusion:** Because the assertion accurately highlights the necessity of a multi-sectoral approach, but the reason incorrectly claims that these individual sectors can operate independently, the assertion is true while the reason is false.

Gemini 3.1 Pro Extended

Question xiv

Assertion (A): Effective health care financing reduces out-of-pocket expenditure. **Reason (R):** Social health insurance pools financial resources and ensures equitable access to healthcare.

a) Both A and R are true and R explains A b) Both A and R are true but R does not explain A c) A is true but R is false d) A is false but R is true

---

Correct Answer: a) Both A and R are true and R explains A

Reasoning and Explanation:

- **Analysis of Assertion (A) - True:** Effective health care financing is a critical component of achieving Universal Health Coverage (UHC). A core objective of establishing robust health financing mechanisms is to provide financial risk protection against catastrophic medical events, thereby significantly reducing the out-of-pocket expenditure (OOPE) that can impoverish vulnerable families.
- **Analysis of Reason (R) - True:** Social health insurance schemes (such as the Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana or the Employees' State Insurance Scheme) operate on the

fundamental principle of pooling financial resources. By collecting and managing funds—often a combination of government, employer, and employee contributions—this system ensures social equity and provides populations with comprehensive, cashless access to healthcare services regardless of their immediate economic status.

- **Conclusion:** The primary method by which a country's health system successfully reduces the burden of individual out-of-pocket expenditure at the point of care is precisely by implementing models like social health insurance. Because pooling the community's financial resources absorbs the costs of medical care and guarantees equitable access, the Reason directly and economically explains the Assertion.

Gemini 3.1 Pro Extended

Question xv

Assertion (A): Measles is not an eradicable disease. **Reason (R):** Secondary attack rate for measles is very high.

a) Both A and R are true and R explains A b) Both A and R are true but R does not explain A c) A is true but R is false d) A is false but R is true

---

Correct Answer: d) A is false but R is true

Reasoning and Explanation:

- **Analysis of Assertion (A) - False:** The assertion that measles is not an eradicable disease is entirely incorrect. Epidemiologically, measles is considered highly amenable to global eradication (alongside diseases like polio). It meets the necessary biological and programmatic criteria for eradication: it has no animal reservoir (it occurs only in humans), natural infection confers lifelong immunity, and there is a highly effective, heat-stable live attenuated vaccine available.
- **Analysis of Reason (R) - True:** The reason statement is factually correct. Measles is a highly contagious viral infection characterized by a very high Secondary Attack Rate (SAR), typically recorded at around 80% among susceptible household contacts (and over 90% when introduced into a completely susceptible "virgin" community).
- **Conclusion:** While the high secondary attack rate is a true epidemiological characteristic of the disease (and presents an operational challenge for containment), the assertion itself is fundamentally false because measles still meets the core epidemiological criteria for eradication. Therefore, the assertion is false, but the reason is true.

Gemini 3.1 Pro Extended

Question xvi

Side effects of intra uterine device are:

1. Liver disorders
2. Bleeding
3. Pelvic infection
4. Ectopic pregnancy

a) 1, 2 and 3 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

---

Correct Answer: d) 2, 3 and 4 are correct

Reasoning and Explanation:

According to the standard guidelines for family planning methods, the side effects and complications specifically associated with an Intrauterine Contraceptive Device (IUCD) include:

- **Statement 2 (Correct): Bleeding** (including menorrhagia and mid-cycle spotting) is the most common complaint and side effect following IUD insertion, often being the primary reason for device removal.
- **Statement 3 (Correct): Pelvic infection** (Pelvic Inflammatory Disease or PID) is a well-documented complication and recognized side effect of IUD use.
- **Statement 4 (Correct): Ectopic pregnancy** is a known major complication. If an IUD user becomes pregnant, the possibility of an ectopic pregnancy must always be considered.
- **Statement 1 (Incorrect): Liver disorders** (such as hepatocellular adenoma and gallbladder disease) are recognized adverse effects and complications associated with the use of Oral Contraceptive Pills (OCPs) or hormonal contraceptives, *not* with intrauterine devices.

Since statements 2, 3, and 4 accurately describe the adverse effects of an IUD, option (d) is the correct choice.

Gemini 3.1 Pro Extended

Question xvii

Elements of primary health care include:

1. Maternal and child health care including family planning
2. Prevention and control of locally endemic diseases

3. Provision of medicines for all conditions
4. Adequate supply of safe water and basic sanitation

a) 1, 2 and 3 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

---

Correct Answer: b) 1, 2 and 4 are correct

Reasoning and Explanation:

According to the Declaration of Alma-Ata (1978), Primary Health Care consists of at least eight essential components or elements. Evaluating the given statements against these established standards:

- **Statement 1 (Correct):** Maternal and child health care, including family planning, is explicitly listed as one of the essential elements of primary health care.
- **Statement 2 (Correct):** The prevention and control of locally endemic diseases is an explicitly stated core element mandated for community-level disease prevention.
- **Statement 4 (Correct):** Providing an adequate supply of safe water and basic sanitation is a fundamental element required for improving the living conditions and health status of the population.
- **Statement 3 (Incorrect):** The Alma-Ata declaration specifically mandates the "provision of **essential drugs**," not the provision of medicines for *all* conditions. Primary health care focuses on supplying a core set of relevant, essential medicines to deal with common diseases and injuries, which is both practical and sustainable, rather than offering a limitless supply for every possible medical condition.

Since statements 1, 2, and 4 correctly represent the documented elements of Primary Health Care, option (b) is the correct choice.

Gemini 3.1 Pro Extended

Question xviii

Which are common risk factors for non-communicable diseases?

1. High blood pressure
2. Unhealthy diet
3. Physical inactivity
4. Poor sanitation

a) 1, 2 and 3 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

---

Correct Answer: a) 1, 2 and 3 are correct

Reasoning and Explanation:

According to the epidemiological principles governing the prevention and control of Non-Communicable Diseases (NCDs) (such as cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases), the disease burden is primarily driven by specific physiological and behavioral risk factors:

- **Statement 1 (Correct):** High blood pressure (raised blood pressure) is a major established physiological risk factor that strongly contributes to cardiovascular diseases and strokes.
- **Statement 2 (Correct):** An unhealthy diet (characterized by high consumption of salt, saturated fats, trans-fats, and refined sugars, alongside low intake of fruits and vegetables) is a primary behavioral risk factor linked to coronary heart disease, diabetes, and certain cancers.
- **Statement 3 (Correct):** Physical inactivity (a sedentary lifestyle) is a core modifiable behavioral risk factor that contributes significantly to the development of obesity, hypertension, diabetes, and cardiovascular diseases.
- **Statement 4 (Incorrect):** Poor sanitation (such as unsafe water and unhygienic disposal of human excreta) is a classic environmental determinant for **communicable diseases** (infectious diseases like cholera, typhoid, and diarrheal diseases). It is not classified as a common risk factor for non-communicable diseases.

Because statements 1, 2, and 3 accurately identify the established risk factors for NCDs, while statement 4 applies to communicable diseases, option (a) is the correct choice.

Gemini 3.1 Pro Extended

Question xix

Steps in disaster preparedness include:

1. Community training
2. Establishing early warning systems
3. Post-disaster rehabilitation
4. Creating a disaster management plan

a) 1, 2 and 3 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

---

Correct Answer: b) 1, 2 and 4 are correct

Reasoning and Explanation:

According to the principles of Disaster Management, the disaster cycle is divided into distinct phases, including pre-disaster (preparedness) and post-disaster (response and recovery) actions.

- **Statement 1 (Correct):** Community training (achieved through public education programmes and disaster simulation exercises) is a fundamental component of disaster preparedness because community members are the first responders and the cornerstone of any emergency preparedness programme.
- **Statement 2 (Correct):** Organizing communication, information, and early warning systems is explicitly listed as a core task of the emergency preparedness phase to ensure timely alerts and readiness before a disaster strikes.
- **Statement 4 (Correct):** Developing plans and procedures (i.e., creating a disaster management plan) is an ongoing, multisectoral activity that forms the integral basis of the national preparedness system.
- **Statement 3 (Incorrect):** Post-disaster rehabilitation is distinctly categorized as a separate phase in the disaster cycle. It belongs to the **recovery phase**, which focuses on the restoration of pre-disaster conditions and providing care *after* the disaster has already occurred and the initial emergency response has concluded.

Because statements 1, 2, and 4 accurately describe steps in disaster preparedness while statement 3 belongs to the subsequent recovery phase, option (b) is the correct choice.

Gemini 3.1 Pro Extended

Question xx

Bilateral agencies include:

1. Colombo plan
2. SIDA
3. USAID
4. CARE

a) 1, 2 and 3 are correct b) 1, 2 and 4 are correct c) 1, 3 and 4 are correct d) 2, 3 and 4 are correct

---

Correct Answer: a) 1, 2 and 3 are correct

Reasoning and Explanation:

According to the classification of International Health organizations and agencies:

- **Statement 1 (Correct):** The **Colombo Plan** is grouped under the health work of bilateral agencies. It was drawn up for cooperative economic and social development in South and South

East Asia, with assistance flowing primarily on a bilateral basis between member countries (providing assistance for health promotion, medical education, and fellowship training).

- **Statement 2 (Correct): SIDA** (Swedish International Development Cooperation Agency) is a prominent bilateral agency representing the Government of Sweden that provides technical and material assistance to India, notably assisting programs like the National Tuberculosis Control Programme.
- **Statement 3 (Correct): USAID** (United States Agency for International Development) is explicitly classified as a bilateral agency. It represents the US Government in extending foreign aid, grants, and loans for health projects like malaria eradication, medical education, water supply, and family planning.
- **Statement 4 (Incorrect): CARE** (Cooperative for Assistance and Relief Everywhere) is strictly classified as a Non-Governmental Organization (NGO) and a voluntary health agency. It is an independent, non-profit, non-sectarian international relief and development organization, *not* a bilateral (government-to-government) agency.

Because statements 1, 2, and 3 accurately identify bilateral agencies while statement 4 identifies a voluntary health agency, option (a) is the correct choice.

Gemini 3.1 Pro Extended

Question

Goal of expenditure on health care as a percentage of GDP to be achieved by 2025.

Correct Answer: 2.5% of GDP

Reasoning and Explanation:

- **Policy Framework:** This target is an explicitly defined quantitative goal under the **National Health Policy 2017**.
- **Health Finance Target:** Under the strategic priorities for health systems strengthening and health financing, the government set specific objectives to improve health care funding.
- **Baseline Shift:** The policy mandates increasing the health expenditure by the Government as a percentage of the Gross Domestic Product (GDP) from the existing baseline of 1.15% to the target of **2.5% by the year 2025**.

Gemini 3.1 Pro Extended

Question

SDG target for ending the epidemic of TB.

Correct Answer: By the year 2030 (specifically under SDG Target 3.3)

Reasoning and Explanation:

- **Specific Target Framework:** Under the Sustainable Development Goals (SDGs) comprehensive health goal (SDG 3), **Target 3.3** explicitly states: *"By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases..."* Therefore, ending the global TB epidemic by 2030 is a formal health target under the UN's 2030 Agenda.
- **Global Strategy Alignment:** In alignment with these SDG 2030 targets, the WHO's "End TB Strategy" outlines the following specific quantitative goals to be achieved by the year 2030:
  - **90% reduction** in TB deaths (compared to the 2015 baseline).
  - **80% reduction** in the TB incidence rate (to less than 20 cases per 100,000 population).
  - **Zero** TB-affected families facing catastrophic financial costs due to the disease.

Gemini 3.1 Pro Extended

Question

Name a worldwide international health agency.

Correct Answer: The World Health Organization (WHO)

Reasoning and Explanation:

- **Primary Agency:** The World Health Organization (WHO) is the premier, single worldwide intergovernmental health agency. It is a specialized, non-political health agency of the United Nations headquartered in Geneva, Switzerland, with the primary objective of ensuring the attainment of the highest possible level of health by all people.
- **Other Worldwide Agencies:** While WHO is the primary answer, other worldwide international agencies involved in health under the United Nations system include:
  - **UNICEF** (United Nations International Children's Emergency Fund)
  - **FAO** (Food and Agriculture Organization)
  - **ILO** (International Labour Organization)
  - **UNDP** (United Nations Development Programme)

- **The World Bank**

Gemini 3.1 Pro Extended

Question

Types of PHC's according to IPHS standards.

Correct Answer: Type A PHC and Type B PHC (based on delivery caseload)

Reasoning and Explanation:

- **Primary Classification (Based on Caseload):** According to the Indian Public Health Standards (IPHS), Primary Health Centres (PHCs) are traditionally classified into two main types based on the number of deliveries they conduct:
  - **Type A PHC:** A PHC conducting less than 20 deliveries per month (< 20 deliveries/month).
  - **Type B PHC:** A PHC conducting 20 or more deliveries per month (≥ 20 deliveries/month).
- **Recent Update (Revised IPHS 2022 Guidelines):** Under the Ayushman Bharat initiative, PHCs are being upgraded to Health and Wellness Centres (HWCs) and are additionally classified based on their geographical setting and function:
  - **HWC-PHC (Rural):** Ideally functioning as 24×7 facilities in rural areas.
  - **Urban HWC-PHC (UPHC-HWC):** Serving urban populations.
  - **Specialist UPHC/Polyclinic:** Providing specialist services on an ambulatory/day-care basis in urban areas.

Gemini 3.1 Pro Extended

Question

Panchayat Raj System at the village level.

Correct Answer: Gram Sabha, Gram Panchayat, and Nyaya Panchayat

Reasoning and Explanation:

The Panchayati Raj is a 3-tier system of rural local self-government in India representing the principle of democratic decentralization. At the foundational village level, the system consists of three distinct institutions:

- **Gram Sabha:** This is the general assembly comprising all the adult residents of the village. It meets at least twice a year to consider taxation proposals, discuss annual development programs, and elect the members of the Gram Panchayat.
- **Gram Panchayat:** Acting as the executive organ of the Gram Sabha, this is the primary agency for planning and development at the village level.
    - *Scope:* It typically covers a population of 5,000 to 15,000 and consists of 15 to 30 members who hold office for a tenure of 3 to 4 years.
    - *Leadership:* It is headed by an elected President (often referred to as Sarpanch, Sabhapati, or Mukhiya), and is assisted by a Vice-President and a Panchayat Secretary.
    - *Functions:* It is responsible for the entire field of local civic administration, explicitly including public health, sanitation, and the overall socio-economic development of the village.
- **Nyaya Panchayat:** This institution functions as the village court, established specifically for the speedy and accessible dispensation of justice at the local level.

Gemini 3.1 Pro Extended

Question

An example for Cost-effective analysis.

Correct Answer: Number of lives saved or number of days free from disease

Reasoning and Explanation:

- **Concept of Cost-Effective Analysis (CEA):** In health management and economics, Cost-Effective Analysis is a technique used to compare the costs of a health program or intervention with its outcomes.
- **Measurement of Benefits:** Unlike Cost-Benefit Analysis (where the benefits of a program are converted into monetary terms), CEA expresses benefits strictly in terms of the actual health results achieved.
- **Standard Examples:** Evaluating an intervention by calculating the "cost per life saved," the "cost per case prevented," or the "number of days free from disease" are classic examples of CEA, as they measure direct, non-monetary health outcomes against the financial cost of the program.

Gemini 3.1 Pro Extended

Question

Define eligible couple.

Correct Answer: A currently married couple where the wife is in the reproductive age group (15 to 45 years of age).

Reasoning and Explanation:

- **Standard Definition:** In demography and community medicine, an "eligible couple" refers specifically to a currently married couple wherein the female partner is in her childbearing years, generally defined as being between 15 and 45 years of age.
- **Programmatic Significance:** This specific demographic constitutes the primary target group in need of family planning services, contraception, and broader reproductive health interventions.
- **Epidemiological Prevalence:** In India, the national average is estimated to be approximately 150 to 180 eligible couples per 1000 population.

Gemini 3.1 Pro Extended

Question

Common side effects of Pentavalent vaccine.

Correct Answer: Mild local reactions (pain, redness, swelling) and mild systemic reactions (fever, irritability).

Reasoning and Explanation:

Following the administration of the Pentavalent vaccine, common side effects are generally mild, self-limiting, and can be broadly categorized into:

- **Local Reactions:** Pain, redness, and swelling specifically at the site of the injection.
- **Systemic Reactions:** Fever (typically >38°C), irritability or abnormal crying, vomiting, loss of appetite, and general malaise (feeling "off-color").
- **Clinical Management:** These minor reactions usually resolve on their own within a few days or can be managed with basic symptomatic care, such as administering paracetamol.
- **Note on Severe Reactions:** While the reactions listed above are common and mild, rare but severe side effects can include extremely high fever (> 39.5°C), seizures, persistent inconsolable

screaming, hypotonic-hyporesponsive episodes, or anaphylaxis. These severe reactions require immediate medical attention.

Gemini 3.1 Pro Extended

Question

What is the cut-off for fast breathing in a child aged 18 months?

Correct Answer: 40 breaths per minute or more

Reasoning and Explanation:

- **Clinical Guidelines:** According to the Integrated Management of Neonatal and Childhood Illness (IMNCI) and Acute Respiratory Infections (ARI) protocols, the diagnostic cut-offs for fast breathing (a primary clinical indicator of pneumonia) are strictly categorized by the child's age.
- **Age Category:** An 18-month-old child falls specifically into the **12 months up to 5 years** age bracket.
- **Standard IMNCI Diagnostic Cut-offs:**
  - **Less than 2 months of age:** 60 breaths per minute or more.
  - **2 months up to 12 months of age:** 50 breaths per minute or more.
  - **12 months up to 5 years of age:** 40 breaths per minute or more.

Because the child is 18 months old, the clinical threshold to define fast breathing is 40 or more breaths per minute.

Gemini 3.1 Pro Extended

Question

List the environmental health measures for rehabilitation after a disaster.

Correct Answer: Water supply management, food safety, basic sanitation, and vector control.

Reasoning and Explanation:

During the rehabilitation phase following a disaster, health care priorities shift rapidly from emergency casualty treatment toward crucial environmental health and preventive measures to avoid secondary outbreaks. The key measures include:

- **Water Supply:** Conducting a survey of all public water systems to ensure physical integrity, along with microbiological and chemical safety. A critical priority is ensuring safe drinking water through proper chlorination (maintaining a residual chlorine level of 0.2–0.5 mg/litre) and protecting water sources from contamination.
- **Food Safety:** Maintaining strict kitchen sanitation in temporary shelters or camps and closely monitoring the personal hygiene of individuals involved in food preparation to prevent food-borne diseases.
- **Basic Sanitation and Personal Hygiene:** Ensuring the sanitary disposal of human excreta by providing emergency latrines for the displaced population. It also includes providing adequate washing, cleaning, and bathing facilities.
- **Vector Control:** Intensifying control programs for vector-borne diseases (such as malaria, dengue, leptospirosis, typhus, and plague) by targeting mosquitoes, rats, lice, and fleas, and eliminating their breeding opportunities in the post-disaster environment.

Gemini 3.1 Pro Extended

Question

Any two conditions for medical termination of pregnancy.

Correct Answer: Medical conditions and Eugenic conditions.

Reasoning and Explanation:

According to the Medical Termination of Pregnancy (MTP) Act, 1971, a pregnancy can be legally terminated under specific circumstances. Any two of the following conditions are valid:

- **Medical:** Where the continuation of the pregnancy might endanger the mother's life or cause grave injury to her physical or mental health.
- **Eugenic:** Where there is a substantial risk of the child being born with serious handicaps due to genetic, physical, or mental abnormalities.

*(Note: Other legally recognized conditions include **Humanitarian** (where the pregnancy is a result of rape), **Socio-economic** (where the actual or reasonably foreseeable environment could lead to a risk of injury to the mother's health), and **Failure of contraceptive devices**).*

Gemini 3.1 Pro Extended

Question

Any two functions of UNICEF.

Correct Answer: Child Health and Child Nutrition.

Reasoning and Explanation:

The United Nations International Children's Emergency Fund (UNICEF) focuses on a "whole child" approach, prioritizing the survival, protection, and development of children. Any two of the following major functions are valid:

- **Child Health:** Promoting primary healthcare for mothers and children, providing substantial assistance for the production of vaccines and sera (such as supporting the BCG vaccination program), and assisting in environmental sanitation programs to provide safe drinking water and reduce child illnesses.
- **Child Nutrition:** Supporting applied nutrition programs to improve child feeding with low-cost, protein-rich foods, and providing specific interventions to control nutritional deficiency diseases (e.g., distributing massive doses of Vitamin A, iodized salt, and iron and folic acid supplements).

*(Note: Other core functions include promoting **Family and Child Welfare** through day-care centers and parent education, supporting formal and non-formal **Child Education**, and spearheading the **GOBI-FFF campaign** for a child health revolution).*

Gemini 3.1 Pro Extended

Question

Any two warning signs of cancer.

Correct Answer: A lump or hard area in the breast (or elsewhere) and a persistent change in digestive and bowel habits.

Reasoning and Explanation:

According to guidelines for the early detection of cancer, there are several recognized early warning signs (often referred to as "danger signals"). Any two of the following are valid answers:

- A lump, hard area, or thickening in the breast or elsewhere.
- An obvious change in a wart or mole.
- A persistent change in digestive, bowel, or bladder habits.
- A persistent, nagging cough or hoarseness.
- Unusual bleeding, blood loss, or discharge from any natural orifice (including excessive loss of blood during menstruation or outside usual dates).

- A swelling or sore that does not get better or heal.
- Unexplained loss of weight.

Gemini 3.1 Pro Extended

Question

Any two differences between measles and chickenpox.

Correct Answer: The nature of the rash (pleomorphic vs. maculo-papular) and the presence of Koplik's spots.

Reasoning and Explanation:

Based on their clinical and epidemiological features, any two of the following major differences can be cited:

- **Nature of the Rash:** In **chickenpox**, the rash is vesicular (appearing like "dew-drops" on the skin) and characteristically exhibits pleomorphism (all stages of the rash—macules, papules, vesicles, and crusts—can be seen simultaneously in the same area). In **measles**, the rash is a dusky-red, macular or maculo-papular eruption that does not exhibit pleomorphism.
- **Distribution of the Rash:** The **chickenpox** rash follows a centripetal distribution (it first appears and is most abundant on the trunk, and is less abundant on the face and limbs). The **measles** rash typically begins behind the ears and spreads rapidly downwards over the face, neck, trunk, and extremities.
- **Pathognomonic Clinical Signs:** The prodromal stage of **measles** is specifically characterized by the presence of Koplik's spots (small bluish-white spots on a red base on the buccal mucosa opposite the lower molars). These spots are completely absent in **chickenpox**.
- **Causative Agent: Measles** is caused by an RNA paramyxovirus, whereas **chickenpox** is caused by the Varicella-Zoster (V-Z) virus (Human alphaherpesvirus 3).

Gemini 3.1 Pro Extended

Question

Any two advantages of breastfeeding.

Correct Answer: Nutritional/immunological protection and the promotion of maternal-infant bonding.

Reasoning and Explanation:

According to standard nutritional and maternal-child health guidelines, any two of the following major advantages of breastfeeding are valid:

- **Nutritional Adequacy and Safety:** Breast milk is safe, clean, hygienic, and inexpensive. It is readily available to the infant at the correct temperature and fully meets the nutritional requirements of the infant in the first few months of life.
- **Immunological Protection:** It contains potent antimicrobial factors (such as secretory IgA, macrophages, lysozyme, and lactoferrin) that provide considerable protection against diarrheal diseases, necrotizing enterocolitis, and respiratory infections.
- **Psychological Benefits:** It actively promotes emotional and psychological "bonding" between the mother and the infant.
- **Long-term Health and Digestion:** It is easily digested and utilized by both normal and premature babies. It prevents malnutrition, significantly reduces infant mortality, and protects babies from the tendency to develop childhood obesity.
- **Maternal Benefits:** It provides a natural contraceptive effect by prolonging the period of infertility (lactational amenorrhea), which helps parents in spacing their children.

Gemini 3.1 Pro Extended

Question

Rule of halves is associated with…….

Correct Answer: Hypertension (High Blood Pressure)

Reasoning and Explanation:

- **Epidemiological Concept:** The "Rule of Halves" is a classic epidemiological principle used to describe the "iceberg disease" phenomenon of hypertension within a community.
- **The Rule States:** It highlights the massive gap in diagnosis and care by stating that in a general population:
  - Only about **half** of all hypertensive subjects are actually aware of their condition.
  - Only about **half** of those who are aware of the problem are currently receiving treatment.
  - Only about **half** of those who are being treated are considered to be adequately treated (having their blood pressure successfully controlled).

Question

List the medicines used to treat multidrug-resistant tuberculosis.

Correct Answer: Second-line anti-TB drugs classified into WHO Groups A, B, and C (e.g., Bedaquiline, Linezolid, Levofloxacin/Moxifloxacin, Clofazimine, and Cycloserine).

Reasoning and Explanation:

According to the National Tuberculosis Elimination Programme (NTEP) and recent WHO guidelines, medicines recommended for the treatment of Multidrug-Resistant Tuberculosis (MDR-TB) are prioritized and classified into three groups to construct effective, all-oral regimens:

- **Group A (Core Second-Line Agents - Include all three):**
  - Levofloxacin OR Moxifloxacin
  - Bedaquiline
  - Linezolid
- **Group B (Second-Line Agents added next - Add one or both):**
  - Clofazimine
  - Cycloserine OR Terizidone
- **Group C (Add-on Agents to complete the regimen when Group A and B drugs cannot be used):**
  - Ethambutol
  - Delamanid
  - Pyrazinamide
  - Amikacin (OR Streptomycin)
  - Ethionamide OR Prothionamide
  - p-aminosalicylic acid (PAS)
  - Imipenem-cilastatin OR Meropenem

*(Note: Newer short-course regimens, such as the BPaLM regimen, also utilize **Pretomanid** in combination with Bedaquiline, Linezolid, and Moxifloxacin. Older second-line injectable agents like Kanamycin and Capreomycin have historically been used but are being phased out in favor of these all-oral regimens).*

Gemini 3.1 Pro Extended

Question

Any two national health programs related to nutrition.

Correct Answer: POSHAN Abhiyaan (National Nutrition Mission) and the Mid-Day Meal Programme (PM POSHAN).

Reasoning and Explanation:

According to the national health guidelines, there are several major health and supplementary feeding programs related to nutrition in India. Any two of the following are valid answers:

- **POSHAN Abhiyaan (National Nutrition Mission):** A flagship program that aims to reduce stunting, under-nutrition, anemia, and low birth weight in children, adolescents, and women through a life-cycle approach.
- **Mid-Day Meal Programme (PM POSHAN Shakti Nirman):** A supplementary school lunch program aimed at improving the nutritional status of primary school children while simultaneously increasing school enrollment, retention, and attendance.
- **Integrated Child Development Services (ICDS) Scheme:** A comprehensive program that provides a package of services, including supplementary nutrition, to children under 6 years of age, pregnant women, and lactating mothers.
- **Anemia Mukt Bharat (Intensified National Iron Plus Initiative):** A program designed to reduce the prevalence of anemia across various target age groups.
- **National Iodine Deficiency Disorders Control Programme (NIDDCP):** Focuses on the provision and monitoring of iodized salt to prevent iodine deficiency disorders.
- **Vitamin A Prophylaxis Programme:** Also known as the National Programme for Prevention of Nutritional Blindness due to Vitamin A deficiency.

Gemini 3.1 Pro Extended

Question

Any two causes of avoidable blindness in India.

Correct Answer: Un-operated Cataract and Uncorrected Refractive Errors.

Reasoning and Explanation:

According to the National Programme for Control of Blindness and Visual Impairment (NPCBVI) and the "Vision 2020: The Right to Sight" initiative, avoidable blindness encompasses conditions that are either preventable or curable. Any two of the following major causes are valid answers:

- **Un-operated Cataract:** The principal cause of curable blindness in India.
- **Uncorrected Refractive Errors:** A highly common and easily corrected cause of visual impairment.
- **Xerophthalmia / Vitamin A deficiency:** A major cause of preventable childhood blindness (nutritional blindness).
- **Trachoma and Corneal Blindness:** Preventable through environmental hygiene and early medical intervention.
- **Glaucoma and Diabetic Retinopathy:** Avoidable through early detection, screening, and timely management.

Gemini 3.1 Pro Extended

Question

Write the intradermal vaccine schedule for rabies post-exposure prophylaxis.

Correct Answer: The 2-site intradermal regimen (2-2-2-0-2) administered on Days 0, 3, 7, and 28.

Reasoning and Explanation:

The recommended intradermal (ID) vaccine schedule for rabies post-exposure prophylaxis (PEP) follows the **2-site intradermal regimen**, also clinically referred to as the Updated Thai Red Cross Regimen or the 2-2-2-0-2 regimen.

- **Schedule (Days):** The vaccine is administered on **Days 0, 3, 7, and 28**. (The Day 14 dose is intentionally skipped).
- **Dose: 0.1 ml** per site.
- **Site of Administration:** Administered at **2 sites** simultaneously on each of the scheduled days (typically one injection each in the left and right deltoid or anterolateral thigh).

Gemini 3.1 Pro Extended

Question

Any two functions of WHO.

Correct Answer: Prevention and control of specific diseases and the development of comprehensive health services.

Reasoning and Explanation:

According to the constitutional mandate and broad areas of work of the World Health Organization (WHO), any two of the following major functions are valid answers:

- **Prevention and Control of Specific Diseases:** Initiating global eradication and immunization campaigns (e.g., against smallpox and poliomyelitis) and maintaining global epidemiological surveillance of communicable and non-communicable diseases.
- **Development of Comprehensive Health Services:** Acting as the directing and coordinating authority on international health work to support national health policy development and organize health systems based on primary healthcare.
- **Promoting Family Health:** Focusing on maternal and child healthcare, human reproduction, nutrition, and health education.
- **Promoting Environmental Health:** Advising on basic sanitary services and ensuring the protection of air, water, and food quality.
- **Other Key Functions:** Publishing and disseminating health statistics, stimulating and coordinating biomedical research, and acting as a clearinghouse for health literature and information.

Gemini 3.1 Pro Extended

Question

Any two indicators of obesity.

Correct Answer: Body Mass Index (BMI) and Waist-Hip Ratio (WHR).

Reasoning and Explanation:

According to standard epidemiological criteria for the assessment of obesity, there are several accepted clinical indicators or indices. Any two of the following are valid answers:

- **Body Mass Index (BMI):** Also known as Quetelet's index, this is the most widely used metric for classifying overweight and obesity.
- **Waist-Hip Ratio (WHR) & Waist Circumference (WC):** These are particularly important indicators used to assess central or abdominal obesity.

- **Skinfold Thickness (SFT):** Assessed using skin calipers (like the Harpenden caliper) to measure subcutaneous fat.
- **Other Valid Indices:** Ponderal index, Broca's index, Corpulence index, and the Lorentz formula.

Gemini 3.1 Pro Extended

Question

Any two tests of pasteurization of milk.

Correct Answer: Phosphatase Test and Standard Plate Count (or Coliform Count).

Reasoning and Explanation:

According to standard food safety guidelines, any two of the following tests used to check the quality and efficacy of pasteurized milk are valid:

- **Phosphatase Test:** This is the most widely used test to check the adequacy of pasteurization or the accidental addition of raw milk. It is based on the principle that the heat-sensitive enzyme phosphatase (naturally present in raw milk) is completely destroyed if pasteurization is performed correctly (e.g., at 60°C for 30 minutes).
- **Standard Plate Count:** This test determines the overall bacteriological quality of the pasteurized milk. The recommended acceptable limit is < 50,000 CFU/ml (colony-forming units).
- **Coliform Count:** Coliform organisms are completely destroyed by proper pasteurization. Therefore, they should be completely absent in 1 ml of milk. Their presence is a direct indication of either improper pasteurization or post-pasteurization contamination.

Gemini 3.1 Pro Extended

Question

Any two human factors in accident causation.

Correct Answer: Psychological factors (e.g., risk-taking behavior) and Physical/Medical conditions (e.g., impaired vision or sudden illness).

Reasoning and Explanation:

Based on the epidemiological determinants of accidents, there are several human factors responsible for accident causation. Any two of the following categories (or specific examples within them) are

valid answers:

- **Psychological / Psycho-social Factors:** Carelessness, inattentiveness, overconfidence, risk-taking behavior, impulsiveness, defective judgment, lack of experience, and emotional stress.
- **Physical / Medical Conditions:** Impaired vision, inadequate hearing acuity, and sudden illnesses (such as a heart attack or epilepsy).
- **Physiological / Demographic Factors:** Extreme fatigue, long working hours, and demographic variables like age and sex.
- **Lack of Body Protection:** Non-use of essential safety gear, such as helmets or seat belts.

Gemini 3.1 Pro Extended

Question

Any two quantitative methods of management.

Correct Answer: Cost-Benefit Analysis (CBA) and Cost-Effective Analysis (CEA).

Reasoning and Explanation:

Based on the quantitative methods and techniques applied in the management of health services, these tools are largely derived from the fields of economics, operations research, and budgeting. Any two of the following are valid answers:

- **Cost-Benefit Analysis (CBA)**
- **Cost-Effective Analysis (CEA)**
- **Cost-Accounting**
- **Input-Output Analysis**
- **Systems Analysis**
- **Network Analysis:** This includes techniques such as PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method).
- **Planning-Programming-Budgeting System (PPBS)**
- **Work Sampling**

Gemini 3.1 Pro Extended

Question

Any two job responsibilities of health worker female.

Correct Answer: Maternal and Child Health (MCH) services and Family Planning services.

Reasoning and Explanation:

The Health Worker Female, also known as the Auxiliary Nurse Midwife (ANM), is a vital grassroots-level functionary at the sub-center level. Any two of the following major job responsibilities are valid answers:

- **Maternal and Child Health (MCH) Services:** Registering and providing comprehensive antenatal care to pregnant women (ensuring at least four antenatal check-ups), conducting or supervising deliveries in her area, and conducting post-natal home visits to monitor the health of the mother and newborn.
- **Family Planning:** Maintaining and updating the eligible couple register, distributing conventional contraceptives and oral pills, and providing follow-up services to family planning acceptors.
- **Universal Immunization Programme (UIP):** Administering vaccines (such as BCG, Pentavalent, OPV, and Measles/MR) to infants, children, and pregnant women according to the national immunization schedule, while ensuring the safe storage and maintenance of the vaccine cold chain.
- **Nutrition:** Distributing Iron and Folic Acid (IFA) tablets and Vitamin A solution to pregnant women, nursing mothers, and young children, as well as identifying cases of malnutrition.
- **Disease Surveillance and Vital Events:** Notifying the Medical Officer (PHC) immediately of any abnormal increase in communicable diseases (e.g., severe diarrhea, fever with rash) and maintaining accurate records of vital events like births and deaths in her area.

Gemini 3.1 Pro Extended

Question

Any two signs and symptoms of leptospirosis.

Correct Answer: Fever (often with chills) and Myalgia (prominent calf muscle tenderness).

Reasoning and Explanation:

The clinical presentation of leptospirosis is highly variable, ranging from a mild anicteric illness to a severe icteric disease (Weil's disease). Any two of the following clinical signs and symptoms are valid answers:

- **Fever:** Often abrupt in onset and accompanied by chills.

- **Myalgia:** Severe muscle pain, with prominent calf muscle tenderness being a highly characteristic feature.
- **Conjunctival Suffusion:** Bilateral redness and congestion of the conjunctiva (without purulent discharge).
- **Headache:** Typically intense and throbbing.
- **Jaundice:** Characteristic of the severe icteric form, known as Weil's disease.
- **Other Manifestations:** Renal issues (such as acute renal failure), pulmonary symptoms (cough, chest pain, hemoptysis), and bleeding/hemorrhagic tendencies.

Gemini 3.1 Pro Extended

Question

Any two components of a disaster cycle.

Correct Answer: Disaster Preparedness and Disaster Response.

Reasoning and Explanation:

The disaster management cycle consists of several phases corresponding to actions taken before, during, and after a disaster impact. Any two of the following components (or phases) are valid answers:

- **Disaster Preparedness:** Long-term activities designed to strengthen the capability of a country or community to manage emergencies efficiently (e.g., organizing communication and warning systems, stockpiling resources, and preparing response plans).
- **Disaster Response:** The immediate relief, search and rescue, and medical care provided to victims during the impact phase (e.g., providing first aid, triage, tagging, and establishing epidemiological surveillance).
- **Disaster Mitigation:** Preventive measures taken prior to a disaster to minimize its severity or impact.
- **Rehabilitation (Recovery):** Actions taken in the aftermath of a disaster to restore basic services and support the affected population.
- **Reconstruction:** The long-term process of rebuilding damaged infrastructure and returning the community to normalcy.