

## AIIMS NORCET 10 Memory Based Paper 11 April 2026 -Exam

**Q.1** Who among the following had written the novel 'Untouchable'?

- A. Harivansh Rai Bachchan
- B. Raja Roy
- C. Mulk Raj Anand
- D. R K Narayan

**Answer:** C

**Sol:** The correct answer is (c) Mulk Raj Anand

- **Mulk Raj Anand** is the author of the famous novel '**Untouchable**', published in **1935**.
- The novel explores the **plight of the Dalits** (formerly known as untouchables) in Indian society through the character **Bakha**, a young sweeper.
- It highlights the **social injustices, caste discrimination**, and the **need for reform** in pre-independence India.
- Anand was known for his **social realism**, and 'Untouchable' was inspired by his personal experiences and **Gandhian ideology**.

**Information Booster:**

- **Mulk Raj Anand** is considered one of the **founding fathers of Indian English fiction**.
- Other major works: *Coolie*, *The Big Heart*, *The Private Life of an Indian Prince*.
- His writings often addressed issues like **poverty, caste, and class**.
- He was influenced by **Mahatma Gandhi**, whom he also met in person.
- 'Untouchable' brought **international recognition** to Anand.

**Q.2** Find the value of  $7^3 - 9^2 + \left(\frac{38}{2}\right)^2 - 0 + 7 \times 4$

- A. 648
- B. 651
- C. 658
- D. 655

**Answer:** B

**Sol:** Given:

$$7^3 - 9^2 + \left(\frac{38}{2}\right)^2 - 0 + 7 \times 4$$

**Concept Used:**

**Operation preference wise      Symbol**

Brackets

$[], \{\}, ()$

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**Solution:**

$$7^3 - 9^2 + \left(\frac{38}{2}\right)^2 - 0 + 7 \times 4$$

$$= 343 - 81 + 361 + 28$$

$$= 651$$

**Q.3** Which Article of the Indian Constitution states that "There shall be a High Court for each state"?

- A. Article 214
- B. Article 125
- C. Article 245
- D. Article 275

**Answer:** A

**Sol:** The correct answer is **(a) Article 214.**

- Article 214 of the Indian Constitution specifically provides that "there shall be a High Court for each state." This provision establishes the framework for the judiciary in each state and ensures that there is a High Court to oversee and administer justice at the state level.
- High Courts have the authority to exercise original jurisdiction and appellate jurisdiction in civil and criminal matters, along with the power to review the decisions of lower courts.

**Additional Information:**

- High Courts play a crucial role in the Indian judicial system, serving as the highest court within the state and also functioning as a court of record. They can also hear cases involving constitutional issues and matters relating to the interpretation of laws.

**Other Options:**

- **Article 125:** This article pertains to the salaries of judges of the Supreme Court and High Courts, not their establishment.
- **Article 245:** This article relates to the distribution of legislative powers between the Parliament and the state legislatures, not specifically about High Courts.
- **Article 275:** This article deals with the grants-in-aid to certain states and does not mention High Courts.

**Q.4** The Ministry of Panchayati Raj launched Panchayat Advancement Index (PAI) 2.0 during a National Writeshop held in which city in 2025?

- A. Mumbai
- B. Bengaluru
- C. New Delhi
- D. Hyderabad

**Answer:** C

**Sol:** The correct answer is (c) New Delhi

- The **Panchayat Advancement Index (PAI) 2.0** was officially launched during a **two-day National Writeshop** held on **26-27 May 2025** at the **Dr. Ambedkar International Centre, New Delhi.**

- This event was organized by the **Ministry of Panchayati Raj (MoPR)** to promote data-driven governance in rural areas.
- PAI 2.0 aims to empower **Gram Panchayats** with better tools for planning, monitoring, and governance aligned with **Localized Sustainable Development Goals (LSDGs)**.
- The writeshop involved participation from **32 states and UTs**, multiple government departments, experts from NITI Aayog, UNICEF, UNFPA, and other development partners.
- The event was livestreamed in **11 Indian languages**, reflecting linguistic inclusivity.

**Information Booster:**

- PAI 2.0 reduced indicators from **516 to 147** to improve data quality.
- Introduced tools like a **mobile-friendly portal, LIF booklet, SOPs, and Decision Support System (DSS)**.
- Covers 9 themes including **poverty alleviation, health, education, water, environment, infrastructure, governance, social justice, and women's empowerment**.
- Supports **transparent and decentralized rural governance**.
- Previous version, PAI 1.0, was the baseline for measuring Gram Panchayat performance in FY 2022–23.
- Event was inaugurated by senior officials including Secretaries of MoPR and MoSPI.

**Additional Information:**

- Dr. Ambedkar International Centre is located in **New Delhi**.
- Ministry of Panchayati Raj focuses on strengthening **local self-government institutions**.
- NITI Aayog and other partners provide technical and policy support.
- Livestreaming in multiple languages ensures **wider accessibility and participation**.

**Q.5**

Change the following sentence into the Active form.

It was being said that the new policy would be a disaster.

- A. The new policy would be a disaster.
- B. The news said the new policy would be a disaster.
- C. People were saying that the new policy would be a disaster.
- D. Someone has said that the new policy was a disaster.

**Answer:** C

**Sol:** The correct option is (C).

**Explanation:** The original sentence is in the Passive Voice of the Past Continuous tense ('was being said'). To change it to active voice, we need to introduce a generic subject (like 'People' or 'They') and use the Past Continuous form \$was/were + V-ing\$.

**Structure:**

**Passive:** It + was + being + \$V\_3\$ (said).

**Active:** Subject (People) + were + \$V\$-ing\$ (saying).

**Why other options are incorrect:**

- Option A changes the meaning and omits the reporting part.
- Option B introduces 'The news', which is not implied in the original vague 'It'.
- Option D uses 'has said' (Present Perfect), which is the wrong tense.

So the correct answer is (c)

**Q.6** Which of the following is NOT a component of revenue receipt?

- A. Amount borrowed from World Bank
- B. GST
- C. Fees paid for the registration of property
- D. Grant received by UNESCO

**Answer:** A

**Sol: The Correct Answer is A**

**Explanation:**

- **Revenue receipts** are non-repayable funds, including taxes, fees, and grants.
- **Amount borrowed from the World Bank** is a **capital receipt** because it requires repayment.
- **GST, registration fees, and grants from UNESCO** are **revenue receipts**, with no repayment obligation.

**Key Points:**

- **Revenue receipts** – Include taxes, duties, fees, and grants.
- **Capital receipts** – Include loans and borrowings.
- **Revenue receipts** fund the government's daily operations.

**Additional Information:**

- **GST** – A **revenue receipt** from taxes on goods and services.
- **Fees for registration** – A **revenue receipt** from government services.
- **Grant from UNESCO** – A **revenue receipt** for specific purposes.

**Q.7** Under which Act did the individual members of the Executive Council have their own portfolio?

- The Indian Councils Act of 1858
- The Indian Councils Act of 1861
- The Indian Councils Act of 1892
- The Indian Councils Act of 1909

**Answer:** B

**Sol:** The correct answer is (b) The Indian Councils Act of 1861

- The **Indian Councils Act of 1861** is significant for introducing the **portfolio system** in British India.
- Under this Act, **members of the Viceroy's Executive Council** were assigned **specific departments (portfolios)** such as home, finance, law, etc.
- This system was introduced by **Lord Canning**, the then Viceroy of India, to bring administrative efficiency and decentralization.
- It laid the **foundation of the modern cabinet system** in India, as members began operating with relative autonomy within their own departments.

**Information Booster:**

- The Act was passed during the tenure of **Lord Canning** (Viceroy from 1856–1862).
- It empowered the **Viceroy to issue ordinances** in case of emergencies.
- Introduced **legislative councils** at the provincial level.
- The **portfolio system** helped distribute workload among council members.
- It reversed the **centralized governance** created by the Government of India Act, 1858.
- It also included **non-official Indian members** in legislative councils.

**Additional Information:**

- **Option (a) The Indian Councils Act of 1858** – This Act transferred power from East India Company to the Crown, but didn't introduce portfolios.
- **Option (b) The Indian Councils Act of 1861** – Introduced the **portfolio system** under Lord Canning.
- **Option (c) The Indian Councils Act of 1892** – Enlarged legislative councils and allowed indirect election, but didn't introduce portfolios.
- **Option (d) The Indian Councils Act of 1909** – Also called Morley-Minto Reforms, known for introducing separate electorates, not portfolios.

**Q.8** Which country holds the largest combined proven oil and natural gas reserves in 2025 but faces challenges due to sanctions and underutilization?

- Russia
- Saudi Arabia
- Iran
- Venezuela

**Answer:** D

**Sol:** The correct answer is (d) Venezuela

- **Venezuela** holds **over 300 billion barrels of proven oil reserves**, the **largest in the world**, mostly located in the **Orinoco Belt**.
- It also has **over 200 trillion cubic feet of natural gas**, making it one of the richest countries in combined hydrocarbon reserves.

- Despite this, its energy sector remains underdeveloped due to **economic mismanagement, U.S. sanctions, and deteriorating infrastructure.**
- The country has struggled to attract **foreign investment** and lacks the technological capabilities to fully exploit its vast reserves.

**Information Booster:**

- **Venezuela** leads the world in proven oil reserves.
- Its **natural gas reserves** are among the **largest in Latin America.**
- The sector suffers from **sanctions, corruption, and lack of maintenance.**
- **Russia** has the largest **natural gas** reserves globally.
- **Saudi Arabia** is a **global oil leader** via **Aramco** and leads OPEC.
- **Iran** shares the **world's largest gas field (South Pars)** with Qatar.

**Additional Information:**

- **Russia** – Holds over **1,300 trillion cubic feet of gas**, but its oil reserves (107 billion barrels) are less than Venezuela's.
- **Saudi Arabia** – Possesses ~267 billion barrels of oil and 300 trillion cubic feet of gas, but less than Venezuela in oil alone.
- **Iran** – Has massive reserves (~155 billion barrels oil and 1,200 trillion cubic feet gas), but not as high in oil as Venezuela.
- **Venezuela** – **Correct**; despite being resource-rich, its production is **hampered by sanctions and governance issues.**

**Q.9** A man riding on a bicycle at a speed of 66 km/h crosses a bridge in 18 minutes. Find the length of the bridge?

- A. 19.8 km
- B. 22.5 km
- C. 21.9 km
- D. 24.5 km

**Answer:** A

**Sol: Given:**

Speed of the man on bicycle = 66 km/h

Time taken to cross the bridge = 18 minutes

**Formula Used:**

Distance = Speed × Time.

**Solution:**

$$18 \text{ minutes} = \frac{18}{60} \text{ hours}$$

Now,

$$\text{Distance} = 66 \times \frac{18}{60} = 19.8 \text{ km}$$

**Q.10** The sum of five numbers is 655. The average of the first two numbers is 76 and the third number is 104. Find the average of the remaining two numbers?

- A. 181
- B. 199.5
- C. 200.5
- D. 180

**Answer:** B

**Sol: Given:**

Sum of 5 numbers = 655

Average of first two numbers = 76

Third number = 104

**Formula Used:**

$$\text{Average} = \frac{\text{Remaining sum}}{2}$$

**Solution:**

Sum of first two numbers =  $76 \times 2 = 152$

Sum of first three numbers =  $152 + 104 = 256$

Remaining sum =  $655 - 256 = 399$

Average of remaining two =  $\frac{399}{2} = 199.5$

**Q.11** The Nehru Trophy Boat Race is held in \_\_\_\_\_.

- A. Kerala
- B. Goa
- C. Maharashtra
- D. Andhra Pradesh

**Answer:** A

**Sol:** The correct answer is (a) Kerala

- The **Nehru Trophy Boat Race** is a famous **vallamkali** (traditional snake boat race) held annually in **Alappuzha (Alleppey), Kerala**.
- It takes place on the **Punnamada Lake**, typically in the month of **August**, during the **Onam festival** season.
- The race was first conducted in **1952** in honor of **Prime Minister Jawaharlal Nehru**, who was so impressed by the event that he donated a silver trophy shaped like a snake boat.

**Information Booster:**

- The boats used in the race are called "**Chundan Vallams**" (snake boats).
- It features long, narrow boats rowed by **over 100 oarsmen** in perfect rhythm.
- The event draws **thousands of spectators**, including international tourists.
- It symbolizes **Kerala's rich maritime tradition and communal harmony**.
- The race is now part of the **Champions Boat League**, Kerala's water sport tourism initiative.
- The event is organized by the **Kerala State Sports Council**.

**Q.12** What is the SI unit of resistivity?

- A. Ohm/meter
- B. Meter
- C. Ohm
- D. Ohm-meter

**Answer:** D

**Sol:** The correct answer is (d) Ohm-meter

- Resistivity is the property of a material that determines how strongly it resists the flow of electric current.

- It is defined by the formula:  $\rho = R \times \frac{A}{L}$

**where:**

- $\rho$  = Resistivity
- R = Resistance (Ohms)

- A = Cross-sectional area ( $m^2$ )
- L = Length (meters)

- Substituting SI units into the formula:  $\rho = \text{Ohm} \times \frac{m^2}{m} = \text{Ohm-meter}$

- Hence, the SI unit of resistivity is **Ohm-meter ( $\Omega \cdot m$ )**.

**Information Booster:**

- Resistivity is a material constant, unlike resistance which depends on length and area.
- It plays a key role in selecting materials for electrical wiring and insulation.
- Copper and silver have very low resistivity — ideal for conductors.
- Glass and rubber have high resistivity — ideal for insulators.
- Resistivity is temperature-dependent in conductors (increases with temperature).
- The inverse of resistivity is conductivity (unit: siemens per meter).

**Additional Information:**

- (a) Ohm/meter – Incorrect; this implies resistance per unit length, not resistivity.
- (b) Meter – Incorrect; this is a unit of length.
- (c) Ohm – Incorrect; this is the SI unit of resistance, not resistivity.
- (d) Ohm-meter – Correct; standard SI unit of resistivity.

**Q.13** Which of the following sentences has the antonym of 'narrow'?

- A. She is utterly selfish.
- B. I admire his broad outlook,
- C. He is a good boy.
- D. I know him well enough.

**Answer:** B

**Sol:**

**Solution:** Correct answer: (b) I admire his broad outlook.

**Explanation:**

The word 'narrow' means limited in width, space, or even in thinking — for example, a narrow street or a narrow-minded person. The opposite (antonym) of narrow is broad, which means wide, open, or large in scope — both in physical sense and in mental attitude. In this sentence, broad outlook means open-minded or liberal way of thinking, which is the opposite of narrow outlook.

**Information Booster:**

→Antonym means a word opposite in meaning to another word.

Example:

Hot ↔ Cold

Success ↔ Failure

Narrow ↔ Broad

→Broad outlook refers to a person who accepts different ideas and sees the world with open-mindedness.

**Additional Knowledge:**

→Narrow-minded person → one who cannot accept others' opinions easily.

→Broad-minded person → one who is tolerant, understanding, and open to new ideas.

→Both narrow and broad can describe not only physical width but also mental attitude.

**Q.14** Find the value of  $4.05 - 1.25 - 3.68 + 8.76 + 0.5 - 4.26$

- A. 4.36
- B. 4.54
- C. 4.12
- D. 4.02

**Answer:** C

**Sol: Given:**

$4.05 - 1.25 - 3.68 + 8.76 + 0.5 - 4.26$

**Concept Used:**

**Operation preference wise      Symbol**

Brackets  $[], \{\}, ()$

Orders, of  $^x$  (power),  $\sqrt{\quad}$  (root), of

Division  $\div$

Multiplication  $\times$

Addition  $+$

Subtraction  $-$

**Solution:**

$$4.05 - 1.25 - 3.68 + 8.76 + 0.5 - 4.26$$

$$= 4.05 - 1.25 - 3.68 + 8.76 + 0.5 - 4.26$$

$$= 13.31 - 9.19$$

$$= 4.12$$

**Q.15** Which of the following are satellite ports?

- A. Chennai and Mumbai
- B. Paradwip and Vishakhapatnam
- C. Nhava Sheva and Haldia
- D. Mormugao and New Mangalore port

**Answer:** C

**Sol:** The correct answer is (c) Nhava Sheva and Haldia

- **Satellite ports** are **secondary ports** developed to reduce congestion at **major ports**.
- **Nhava Sheva (Jawaharlal Nehru Port)** is a **satellite port of Mumbai Port** and is now India's largest container port.
- **Haldia Port** serves as a **satellite port to Kolkata Port**, handling bulk cargo and easing traffic from the main port.
- These ports help improve cargo handling efficiency and boost trade by diverting pressure from overburdened main ports.

**Information Booster:**

- **Nhava Sheva (JNPT):** Satellite of **Mumbai Port**, located in Navi Mumbai, Maharashtra.
- **Haldia Port:** Satellite of **Kolkata Port**, located in West Bengal.
- Satellite ports are strategically developed to **support major ports** and **decentralize operations**.
- India has **13 major ports** and over **200 non-major/intermediate ports**.
- Satellite ports often specialize in **container handling or bulk cargo**.

**Q.16** The least common multiple of two numbers is 364 and their greatest common factor is 26. If one of the numbers is 26, then find the other number

- A. 26
- B. 364
- C. 52
- D. 104

**Answer:** B

**Sol: Given:**

LCM of two numbers = 364

HCF of two numbers = 26

One of the numbers = 26

**Formula Used:**

LCM × HCF = Product of the two numbers

**Solution:**

Let the other number be x

Then,

$$364 \times 26 = 26 \times x$$

$$x = \frac{364 \times 26}{26} = 364$$

**Q.17** In the Indian Constitution, the part dealing with freedom of trade and commerce within the country and between the states was taken from which country?

- A. United States of America
- B. France
- C. Australia
- D. Great Britain

**Answer:** C

**Sol: The correct answer is: (c) Australia**

**Explanation:**

- The Indian Constitution's provisions related to **trade, commerce, and intercourse within the territory of India** are found in **Part XIII (Articles 301 to 307)**.
- These provisions ensure **freedom of trade and commerce** across state boundaries and promote **economic unity and integration**.
- This concept was **borrowed from the Australian Constitution**, which contains similar provisions ensuring free trade among the states.
- Australia's Section 92 guarantees that **"trade, commerce, and intercourse among the States... shall be absolutely free."**
- India adapted this idea to suit its federal structure and ensure seamless economic activities across its states.

**Information Booster:**

- Articles **301 to 307** in Part XIII of the Constitution deal with trade and commerce.
- Article **301** ensures the **freedom of trade, commerce, and intercourse** throughout the territory of India.
- Parliament can impose **reasonable restrictions** in public interest under **Article 302**.
- The inspiration for these provisions came from **Section 92 of the Australian Constitution**.
- These articles help in maintaining **economic integration** within the Indian Union.
- **Finance Commission and GST Council** ensure fiscal coordination between the Centre and States.

**Additional Information:**

- **United States of America** – Inspired India's **Fundamental Rights and Supreme Court's independence**, not trade provisions.
- **France** – Contributed to the idea of **Republicanism and ideals of Liberty, Equality, and Fraternity**.

- **Great Britain** – Influenced India's **Parliamentary system, bicameral legislature**, and rule of law.

**Q.18** Who invented the electrocardiogram (ECG)?

- A. Willem Einthoven
- B. Edward Jenner
- C. Antonio de Ulloa and Charles Wood
- D. Karl Benz

**Answer:** A

**Sol:** The correct answer is (a) Willem Einthoven. Willem Einthoven, a Dutch physiologist, is credited with inventing the electrocardiogram (ECG) in the early 20th century. He developed the technology and methodology for recording and interpreting electrical signals produced by the heart, which revolutionized the field of cardiology and became an essential diagnostic tool for studying heart conditions. Einthoven's work earned him the Nobel Prize in Physiology or Medicine in 1924.

**Q.19** A cistern can be filled by a tap in 6 hours and emptied by an outlet pipe in 7.5 hours. How long will it take to fill the cistern if both the tap and the pipe are opened together?

- A. 24 hours
- B. 25 hours
- C. 27 hours
- D. 30 hours

**Answer:** D

**Sol: Given:**

Time taken by tap to fill the cistern = 6 hours

Time taken by outlet pipe to empty the cistern = 7.5 hours

**Formula Used:**

Net rate = (Filling rate) - (Emptying rate)

$$\text{Time} = \frac{1}{\text{Net rate}}$$

**Solution:**

$$\text{Filling rate} = \frac{1}{6}$$

$$\text{Emptying rate} = \frac{1}{7.5} = \frac{2}{15}$$

$$\text{Net rate} = \frac{1}{6} - \frac{2}{15}$$

$$= \frac{5 - 4}{30} = \frac{1}{30}$$

$$\text{Time to fill the cistern} = \frac{1}{1/30}$$

$$= 30 \text{ hours}$$

**Alternate Solution:**

Total Work = Time × Net Work Rate

total capacity = LCM (6,7) = 30 units

$$\text{Tap fills} = \frac{30}{6} = 5 \text{ units/hour}$$

$$\text{Pipe empties} = \frac{30}{7.5} = \frac{30 \times 2}{15} = 4 \text{ units/hour}$$

$$\text{Net work rate} = 5 - 4 = 1 \text{ unit/hour}$$

$$\text{Time} = \frac{30}{1} = 30 \text{ hours}$$

**Q.20** The figure of speech used in "I wandered lonely as a cloud ... "?

- A. Hyperbole
- B. Simile
- C. Metaphor
- D. Personification

**Answer:** B

**Sol:** The correct answer is option (b) **Simile**.

**Explanation:** A **simile** explicitly compares two unlike things using *like* or *as*. In Wordsworth's line, "lonely as a cloud," the speaker's loneliness is compared to a solitary cloud using *as*. (Hindi: उपमा अलंकार— जैसे/जैसा या like/as द्वारा तुलना )

**Meanings of all the other given options:**

- (a) **Hyperbole** (अतिशयोक्ति): Deliberate exaggeration for emphasis. *Example:* "I've told you a million times."
- (c) **Metaphor** (रूपक): An implied comparison without *like/as*. *Example:* "Time is a thief."
- (d) **Personification** (मानवीकरण): Attributing human qualities to non-human things. *Example:* "The wind whispered."

**Q.21** Negative symptoms of schizophrenia include:

- A. Auditory hallucinations
- B. Paranoid delusions
- C. Flat affect and avolition
- D. Disorganized speech

**Answer:** C

**Sol:**

Correct Answer: (c)

**Explanation:**

Schizophrenia includes both positive and negative symptoms. Negative symptoms refer to the absence or reduction of normal functions. Flat affect (reduced emotional expression) and avolition (lack of motivation) are key negative symptoms.

These symptoms affect the patient's ability to function socially and occupationally. They are often more difficult to treat than positive symptoms. Early recognition is important for effective management.

Other options describe positive symptoms such as hallucinations and delusions. Therefore, flat affect and avolition are correct.

**Q.22** The drug of choice for treatment of OCD is:

- A. Diazepam
- B. Fluoxetine
- C. Carbamazepine
- D. Lithium

**Answer:** B

**Sol:**

Correct Answer: (b)

Explanation:

Obsessive-compulsive disorder (OCD) is treated primarily with selective serotonin reuptake inhibitors (SSRIs). These drugs increase serotonin levels in the brain.

Fluoxetine is one of the most commonly used SSRIs for OCD. It helps reduce obsessive thoughts and compulsive behaviors.

Other drugs listed are used for anxiety, epilepsy, or bipolar disorder. Therefore, fluoxetine is correct.

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**Q.23** The example for distributive shock among the following shock types is:

- A. Anaphylactic shock
- B. Burn shock
- C. Surgical shock
- D. Haemorrhagic shock

**Answer:** A

**Sol:**

Correct Answer: (a)

Explanation: Distributive shock is characterized by widespread vasodilation leading to decreased systemic vascular resistance and relative hypovolemia despite normal blood volume. Anaphylactic shock is a classic example, caused by severe allergic reactions that trigger massive release of histamine and other inflammatory mediators. This results in vasodilation, increased capillary permeability, hypotension, and sometimes airway obstruction. Burn shock and haemorrhagic shock are primarily classified as hypovolemic shock because they involve significant fluid or blood loss. Surgical shock may involve multiple mechanisms but is not specifically distributive. In distributive shock, the heart may pump adequately, but due to extreme vasodilation, effective perfusion to organs is compromised. Immediate management includes airway support, administration of epinephrine in anaphylaxis, intravenous fluids, and monitoring vital signs. Therefore, anaphylactic shock is the correct example of distributive shock.

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**Q.24** The vaccine that leaves a permanent scar in babies is:

- A. Measles
- B. Pentavalent
- C. DPT
- D. BCG

**Answer:** D

**Sol:** The BCG vaccine produces a local immune response that heals with a characteristic permanent scar, usually on the upper arm, indicating protection against tuberculosis.

(a) Measles: Does not leave a scar; provides immunity without visible mark. (b) Pentavalent: Combination vaccine; does not leave a scar. (c) DPT: Provides immunity but no permanent scar. (d) BCG: Correct. Scar forms as part of the healing response to the live attenuated bacillus.

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**Q.25** The respiratory centre is located in

- A. Cerebrum
- B. Cerebellum
- C. Medulla and Pons
- D. Hypothalamus

**Answer:** C

**Sol: Correct Answer: (c)**

**Information Booster:**

- The medulla contains the dorsal and ventral respiratory groups that regulate basic rhythm.
- The pons has the pneumotaxic and apneustic centers that fine-tune breathing.
- These centers control inspiration, expiration, and respiratory rate.
- They receive input from chemoreceptors and mechanoreceptors.
- Damage to the medulla can lead to respiratory failure.
- Higher brain centers (like the cerebral cortex) can temporarily override this control.

**Additional Knowledge:** · Dorsal respiratory group stimulates diaphragm via phrenic nerve.

- Ventral group becomes active during forced expiration.
- The pneumotaxic center limits inspiration for rhythmic breathing.
- Voluntary breath control occurs during talking or holding breath.
- Brainstem reflexes like sneezing and coughing also involve these centers.
- Apneustic lesions may cause prolonged inspiration.

**Q.26** Which of the following best defines Total Fertility Rate (TFR)?

- The average number of children born to a woman during her reproductive years.
- The percentage of women who are pregnant.
- The average age at which women have their first child.
- The number of live births per 1,000 people in a population

**Answer:** A

**Sol:** The correct answer is: (a), The average number of children born to a woman during her reproductive years.

The total fertility rate in a specific year is defined as the total number of children that would be born to each woman if she were to live to the end of her child-bearing years and give birth to children in alignment with the prevailing age-specific fertility rates.

**Q.27** Bulging sac-like lesion filled with spinal fluid and spinal cord element is:

- Meningocele
- Myelomeningocele
- Hydrocephalus
- Spina bifida occulta

**Answer:** B

**Sol:**

Ans. (b)

**Sol.** Myelomeningocele is a severe form of spina bifida, where a sac-like protrusion contains spinal fluid, meninges, and spinal cord elements. It is associated with neurological deficits such as paralysis or loss of bladder/bowel control, depending on the level of the defect.

**Explanation of each option:**

- (a) Meningocele – Sac contains meninges and CSF, but not spinal cord elements.
- (b) Myelomeningocele – Correct answer. Sac contains CSF, meninges, and spinal cord tissue.
- (c) Hydrocephalus – Excess cerebrospinal fluid in the brain, not a spinal sac.
- (d) Spina bifida occulta – Mildest form with no visible sac; spinal cord and meninges remain inside.

**Q.28** What percentage of fluid loss is considered moderate dehydration?

- 15-20%
- 5-10%
- 10-15%
- 5%

**Answer:** B

**Sol:**

Answer: (b) 5-10%

Explanation:

Dehydration is classified into mild, moderate, and severe based on fluid loss as a percentage of body weight:

- Mild dehydration: <5% fluid loss
- Moderate dehydration: 5-10% fluid loss

· Severe dehydration: > 10% fluid loss

Other Options Explained:

· (a) 15-20%: This level of dehydration is extremely severe and life-threatening, often leading to shock and organ failure.

· (c) 10-15%: This falls into the category of severe dehydration, not moderate.

· (d) 5%: While 5% is at the lower end of moderate dehydration, it is generally considered mild to moderate.

Conclusion:

Since moderate dehydration is defined as 5-10% fluid loss, the correct answer is: (b) 5-10%.

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**Q.29** A contraceptive pill contains

- A. progesterone and estrogen
- B. spermicidal agents
- C. chemicals that cause abortion
- D. chemicals that prevent fertilization of ovum

**Answer:** A

**Sol:** Contraceptive pills contain hormones such as estrogen & progesterone, these work to inhibit the body's natural cyclical hormones to prevent pregnancy.

---

**Q.30** Principle of surgical asepsis:

- A. Clean technique
- B. Keep items below waist sterile
- C. Sterile touches sterile only
- D. Hand hygiene only when visible soil

**Answer:** C

**Sol:** Surgical asepsis aims at total elimination of microorganisms from the field and equipment. The core concept is that any contact between a sterile object and a non-sterile object contaminates the sterile one. Therefore, only sterile-to-sterile contact is allowed during invasive or operative procedures.

Option-wise explanation: (a) Clean technique is part of medical asepsis, which reduces microorganisms but does not achieve sterility. It is used for routine care, not for invasive surgery. (b) Items below the waistline are considered contaminated because they are out of the nurse's visual control. Therefore, they cannot be assumed sterile, so this statement is wrong as a principle. (c) ✓ "Sterile can only touch sterile" is a fundamental rule of surgical asepsis. Violation of this rule introduces microorganisms into the sterile field, increasing infection risk during procedures. (d) Hand hygiene is required even when hands appear clean, because microorganisms may still be present. Limiting it to visible soil ignores microscopic contamination.

---

**Q.31** What does malpractice generally refer to?

- A. Assault
- B. Professional misconduct
- C. Theft
- D. Slander

**Answer:** B

**Sol:**

**Ans:** (b) Professional misconduct

Malpractice refers to the negligent or improper actions of a professional, such as a doctor, lawyer, or other licensed professional, which result in harm or injury to a client or patient. It occurs when the professional fails to perform their duties according to the accepted standards of care, leading to consequences like injury or loss. Examples include medical errors, misdiagnosis, or failure to provide adequate treatment.

Extra Sol.

· Assault refers to physical harm or the threat of harm.

· Theft refers to unlawfully taking someone else's property.

· Slander involves making false spoken statements that damage a person's reputation.

Malpractice is specifically related to professional negligence or misconduct.

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**Q.32** The incubation period of Typhoid bacillus causing typhoid fever is-

- A. 90 to 92 days
- B. 8 to 14 days
- C. 0 to 2 days
- D. 3 to 5 days

**Answer:** B

**Sol:** The correct answer is **(b) 8 to 14 days**.

The **incubation period** is the time between exposure to an infectious agent (like the **Typhoid bacillus**, also known as **Salmonella typhi**) and the appearance of symptoms. For **typhoid fever**, the incubation period typically ranges from **8 to 14 days**.

**1. Incubation Period of Typhoid:**

· After a person ingests food or water contaminated with the **Salmonella typhi** bacteria, it takes about **8 to 14 days** for the first symptoms to appear, although it can vary slightly depending on the individual's immune system and the bacterial load.

**2. Symptoms of Typhoid Fever:**

· Common symptoms after the incubation period include prolonged fever, weakness, abdominal pain, headache, and sometimes a rash. The infection requires prompt medical treatment to prevent complications.

**Q.33** In total parenteral nutrition (TPN), which complication requires immediate nursing action?

- A. Hyperglycemia
- B. Catheter-related bloodstream infection (CRBSI)
- C. Hypokalemia
- D. Hyperlipidemia

**Answer:** B

**Sol:**

Correct Answer: (b) Information Booster:

- Catheter-related bloodstream infections present with fever, chills, and hypotension.
- Immediate nursing action includes notifying the physician and obtaining blood cultures.
- Maintain sterile technique during catheter care to prevent infection.
- Monitor catheter insertion site for redness, swelling, or drainage.
- Early removal of contaminated lines may be required.
- Hyperglycemia and electrolyte imbalances require management but are less urgent.
- Educate patient and staff on signs of infection and prevention measures.
- Regular catheter site assessments and care reduce CRBSI risk.
- Documentation of all catheter-related observations is essential. Additional Knowledge:
- TPN provides complete nutrition intravenously for patients unable to tolerate enteral feeding.
- Monitoring triglycerides helps detect hyperlipidemia.
- Electrolyte imbalances common with TPN require frequent labs.
- Meticulous aseptic technique reduces nosocomial infections.
- CRBSI is a major cause of morbidity and prolongs hospital stay.
- Antibiotic lock therapy may be indicated in some cases.
- Patient education enhances adherence to catheter care protocols.
- Team approach includes nursing, nutrition, infectious disease specialists.

**Q.34** True labor pain is characterized by

- A. Irregular contractions
- B. Pain relieved by rest
- C. Progressive cervical dilatation
- D. Felt only in upper abdomen

**Answer:** C

**Sol:** True labor pain leads to gradual cervical effacement and progressive dilatation. It becomes regular, stronger, and more frequent with time.

Explanation of options: (a) Irregular contractions **X** – Seen in false labor. (b) Pain relieved by rest **X** – Rest does not stop true labor pain. (c)

Progressive cervical dilatation **✓** – Key feature of true labor. (d) Felt only in upper abdomen **X** – False labor pain is felt in abdomen, true labor radiates to back and thighs.

**Q.35** Which phobia is characterized by the fear of pain?

- A. Acrophobia
- B. Gamophobia

- C. Algophobia
- D. Anthophobia

**Answer:** C

**Sol:**

Algophobia is the fear of pain. People with this phobia experience intense anxiety at the thought or experience of pain, whether it is physical injury, illness, or even the idea of something causing them discomfort. This can lead to avoidance behaviors, as individuals may fear situations that could lead to pain, including medical procedures, physical activity, or even emotional pain.

Explanation of each option: • (a) Acrophobia: This is the fear of heights, not pain. It leads to anxiety when an individual is at high altitudes or even thinking about being in such a position. • (b) Gamophobia: This refers to the fear of marriage, not pain. People with gamophobia might avoid long-term commitments due to anxiety about relationships. • (c) Algophobia: Correct. This is the fear of pain, which can significantly impact an individual's willingness to engage in daily activities or medical treatments. • (d) Anthophobia: Anthophobia is the fear of flowers, not pain. It can cause anxiety when someone is around flowers or floral scents.

**Q.36** What drug and route should be used for the active management of the third stage of labor (AMTSL)?

- A. Intravenous (IV) Oxytocin
- B. Intramuscular (IM) Oxytocin
- C. Oral Misoprostol
- D. Methylergometrine (Methergine)

**Answer:** A

**Sol:** S

**Intravenous (IV) Oxytocin**

**Explanation-**

**Intravenous (IV) Oxytocin**

- Primary choice for AMTSL
- Stimulates uterine contractions, leading to placental separation and expulsion
- Reduces the risk of postpartum hemorrhage

**Other Options and Their Significance**

· **Intramuscular (IM) Oxytocin:**

- Less effective than IV oxytocin in preventing postpartum hemorrhage
- Slower onset of action
- Used as a second-line option if IV access is difficult

· **Oral Misoprostol:**

- Can be used for AMTSL in resource-limited settings
- Effective in preventing postpartum hemorrhage
- Slower onset of action compared to IV oxytocin
- **Methylergometrine (Methergine):**
- Primarily used for the treatment of postpartum hemorrhage, not as a first-line drug for AMTSL
- Can cause vasoconstriction, which may be contraindicated in certain patients (e.g., hypertension, pre-eclampsia)

**Importance of AMTSL**

- Reduces the risk of postpartum hemorrhage, a leading cause of maternal mortality
- Shortens the third stage of labor
- Facilitates early postpartum care

**Additional Considerations:**

- The choice of drug for AMTSL should be based on the individual patient's condition and available resources.
- Early clamping and cutting of the umbilical cord should be avoided to allow for adequate placental transfusion to the newborn.
- Controlled cord traction may be performed to assist with placental delivery.

By following guidelines for AMTSL, healthcare providers can significantly improve maternal and neonatal outcomes.

**Q.37** A 28-year-old patient presents with sudden onset of chest pain, palpitations, sweating, and fear of dying. What is the most likely diagnosis?

- A. Generalized Anxiety Disorder
- B. Panic Disorder
- C. Acute Stress Reaction
- D. Post-Traumatic Stress Disorder

**Answer:** B

**Sol:**

The symptoms described are classic signs of a panic attack, which is central to Panic Disorder. The hallmark is sudden and unpredictable episodes of intense fear.

Explanation of options:

- (a) **X** GAD involves chronic worry, not episodic panic.

- (b) ✓ Panic Disorder features recurrent, sudden panic attacks with somatic symptoms.
- (c) ✗ Acute stress reaction follows a specific traumatic event and resolves in days.
- (d) ✗ PTSD includes re-experiencing trauma, avoidance, and hyperarousal — not sudden attacks.

**Q.38** The methods to calculate pediatric doses of drug administration are: A. Body weight method B. Body surface area method C. Parents' age method  
Options:

- A. Only A
- B. A and B
- C. Only B
- D. A, B, and C

**Answer:** B

**Sol:**

Sol. Pediatric drug dosing is primarily calculated using the Body Weight Method and Body Surface Area (BSA) Method. These methods help determine the appropriate medication dose based on the child's physical parameters.

- Body weight method: The dose is calculated per kilogram of body weight (mg/kg/day). It is commonly used but may overestimate or underestimate doses in children with abnormal weight.
- Body surface area (BSA) method: This is considered more accurate as drug metabolism correlates better with BSA than body weight. The formula

used is: 
$$\text{Dose} = \left( \frac{\text{BSA of child (m}^2\text{)}}{\text{BSA of adult (m}^2\text{)}} \right) \times \text{Adult dose}$$

Explanation of each option:

- (a) Only A – Incorrect. While the body weight method is commonly used, it is not the only method; BSA calculation is also widely used in pediatric dosing.
- (b) A and B – Correct answer. Both the body weight method and BSA method are valid techniques for pediatric drug dosing.
- (c) Only B – Incorrect. The BSA method is more accurate than the body weight method, but both are used in clinical practice.
- (d) A, B, and C – Incorrect. The Parents' age method does not exist as a valid method for drug dose calculation in children.

**Q.39** Which ECG change is characteristic of hyperkalemia?

- A. Flattened T waves
- B. U waves
- C. Peaked T waves
- D. Prolonged QT interval

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Hyperkalemia is characterized by tall, peaked T waves on ECG, which occur due to altered cardiac repolarization. As potassium levels rise, cardiac conduction becomes increasingly impaired. Severe hyperkalemia can lead to life-threatening arrhythmias such as ventricular fibrillation or asystole. Other ECG changes may include widened QRS complexes and absent P waves. Early recognition is crucial for preventing cardiac arrest. Hyperkalemia commonly occurs in renal failure, metabolic acidosis, or due to certain medications.

Nursing care involves continuous cardiac monitoring and prompt reporting of ECG changes. Treatment may include calcium gluconate, insulin with glucose, and dialysis in severe cases. Monitoring serum potassium levels is essential.

**Q.40** Which complication is common in uncontrolled diabetes mellitus?

- A. Hypoglycemia
- B. Diabetic ketoacidosis
- C. Hypercalcemia
- D. Hypotension

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Diabetic ketoacidosis (DKA) is a serious complication of uncontrolled diabetes, especially type 1. It occurs due to insulin deficiency, leading to fat breakdown and ketone production. This results in metabolic acidosis.

Symptoms include polyuria, polydipsia, fruity breath odor, and Kussmaul respiration. If untreated, DKA can lead to coma and death. It requires urgent medical attention.

Nursing management includes insulin therapy, fluid replacement, and electrolyte correction. Monitoring blood glucose and ketone levels is essential. Patient education helps prevent recurrence.

**Q.41** Antibiotic streptomycin was discovered by?

- A. Alexander Fleming
- B. Selman Waksman
- C. T.O. Diener
- D. Robert Koch

**Answer:** B

**Sol:** The correct answer is **(B) Selman Waksman**

**Explanation:**

- Streptomycin, the first antibiotic effective against tuberculosis (TB), was discovered by Selman Waksman and his lab assistants at Rutgers University in 1943.
- It was isolated from the soil bacterium Actinomycete 'Streptomyces griseus'.
- Waksman was awarded the Nobel Prize in Physiology or Medicine in 1952 for this discovery, which saved countless lives.
- He is also credited with coining the term 'antibiotic' in its modern scientific context.

**Information Booster:**

- Streptomycin works by inhibiting protein synthesis in bacteria by binding to the 30S ribosomal subunit.
- It is categorized as an 'Aminoglycoside' antibiotic.
- While revolutionary for TB, resistance developed quickly, leading to the use of 'combination therapy' (using multiple drugs) today.

**Additional Knowledge:**

- Alexander Fleming (Option A): Discovered Penicillin, the first true antibiotic, from the mold *Penicillium notatum* in 1928.
- T.O. Diener (Option C): Discovered 'Viroids', which are smaller than viruses and consist only of a short strand of circular RNA without a protein coat.
- Robert Koch (Option D): Known as the father of modern bacteriology; he identified the specific causative agents of tuberculosis, cholera, and anthrax.

**Q.42** Delayed cord clamping should be done after

- A. Immediately after birth
- B. 1–3 minutes after birth
- C. 10 minutes after birth
- D. After placenta delivery

**Answer:** B

**Sol:** Delayed cord clamping (1–3 minutes after birth) allows additional blood to transfer from the placenta to the newborn, preventing anemia and improving iron stores. Explanation of options: (a) Immediately **X** – This is early clamping, not recommended. (b) 1–3 minutes **✓** – WHO guideline. (c) 10 minutes **X** – Too long delay. (d) After placenta delivery **X** – Not done.

**Q.43** Anti-diabetic factor in bittergourd is:

- A. Lipid
- B. Protein
- C. Pigments
- D. None of these

**Answer:** B

**Sol:** The correct answer is **(B) Protein**

**Explanation:**

- Bittergourd (*Momordica charantia*) is globally recognized for its hypoglycemic (blood sugar lowering) effects.
- The specific anti-diabetic factor identified in the fruit is a polypeptide-p (or p-insulin), which is a plant-based 'insulin-like' **protein**.
- Polypeptide-p has been shown to mimic the action of human insulin by facilitating the uptake of glucose by cells, thereby reducing blood sugar levels.
- Another important constituent is 'charantin,' which is a steroidal saponin, but the protein factor is a unique and significant biochemical marker.

- Due to these properties, bittergourd juice and extracts are frequently recommended as an adjunct therapy for Type 2 diabetes.

**Information Booster:**

- Bittergourd belongs to the family Cucurbitaceae.
- The characteristic bitterness is due to the presence of 'momordicin,' an alkaloid substance.

**Additional Knowledge:**

- **Lipid (Option A):** Bittergourd is low in fats and does not contain anti-diabetic lipids.
- **Pigments (Option C):** While the green color (chlorophyll) and other phytonutrients are healthy, they are not the primary anti-diabetic factors.
- **Preparation:** To preserve the medicinal proteins, bittergourd should ideally be consumed with minimal heavy heat processing (like juicing or light steaming).



**Q.44** To calculate cardiac output, heart rate is multiplied with:

- A. Stroke volume
- B. Systemic pressure
- C. Pulmonary arterial pressure
- D. Circulatory volume

**Answer:** A

**Sol:**

**Answer:** (a) Stroke volume **Explanation:** Cardiac output (CO) is calculated by multiplying the heart rate (HR) by the stroke volume (SV). The formula is:

$$CO = HR \times SV$$

Cardiac output represents the amount of blood the heart pumps in one minute. Stroke volume is the amount of blood pumped by the left ventricle in each heartbeat.

**Q.45** Shoulder dystocia is suspected when:

- A. Turtle sign during delivery
- B. Cord pulsation absent
- C. Excessive vaginal bleeding
- D. Fetus in breech presentation

**Answer:** A

**Sol:** Head delivers then retracts → shoulder stuck at pubic bone.

Option-wise explanation: (a) ✓ Classic turtle sign indicates anterior shoulder impaction. (b) Fetal distress sign, not specific to shoulder dystocia. (c) Bleeding may occur later, not diagnostic. (d) Breech is separate complication type entirely.

**Q.46** Which heart sound is associated with heart failure?

- A. S1
- B. S2
- C. S3
- D. S4

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

The S3 heart sound is often associated with heart failure and indicates increased ventricular filling pressures. It is heard after S2 and is sometimes referred to as a "gallop rhythm." This sound is common in conditions with volume overload.

Heart failure leads to decreased cardiac output and fluid accumulation, causing rapid ventricular filling. This produces vibrations that generate the S3 sound. It is considered abnormal in adults.

Nursing assessment includes auscultation of heart sounds and monitoring fluid status. Early detection helps in timely intervention. Management includes diuretics and fluid restriction.

---

**Q.47** A patient with chronic kidney disease develops metabolic acidosis. Which compensatory mechanism occurs?

- A. Decreased respiratory rate
- B. Increased respiratory rate
- C. Increased bicarbonate retention
- D. Decreased hydrogen ion excretion

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

In metabolic acidosis, the body compensates by increasing the respiratory rate to eliminate excess carbon dioxide, which helps raise the pH. This is known as respiratory compensation and is often seen as Kussmaul breathing in severe cases. The lungs act quickly to correct acid-base imbalance compared to renal mechanisms.

Chronic kidney disease impairs the kidneys' ability to excrete hydrogen ions and reabsorb bicarbonate, leading to acid accumulation. As a result, respiratory compensation becomes essential to maintain homeostasis. However, this mechanism is limited and cannot fully correct severe acidosis.

Nursing care involves monitoring arterial blood gases, respiratory patterns, and electrolyte levels. Interventions may include administering bicarbonate therapy if prescribed. Patient education about diet and disease management is also important.

---

**Q.48** Which condition is characterized by "lead pipe" rigidity?

- A. Parkinson's disease
- B. Multiple sclerosis
- C. Epilepsy
- D. Stroke

**Answer:** A

**Sol:**

Correct answer: (a)

Explanation:

Lead pipe rigidity is a feature of Parkinson's disease, characterized by uniform resistance to passive movement. It results from dopamine deficiency in the basal ganglia. This leads to impaired motor control.

Patients also exhibit tremors, bradykinesia, and postural instability. The condition is progressive and affects quality of life. Early treatment helps manage symptoms.

Nursing care includes medication administration and mobility support. Physical therapy is beneficial. Patient safety is a priority.

---

**Q.49** Which type of shock is caused by severe infection?

- A. Cardiogenic shock
- B. Hypovolemic shock
- C. Septic shock
- D. Neurogenic shock

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Septic shock is a type of distributive shock caused by severe infection leading to systemic inflammatory response. It results in vasodilation, increased capillary permeability, and decreased tissue perfusion. This can lead to multiple organ failure if not treated promptly.

Pathogens release toxins that trigger widespread inflammation. This disrupts normal circulation and oxygen delivery. Early signs include fever,

tachycardia, and hypotension.

Nursing care involves early recognition and rapid intervention. Management includes IV fluids, antibiotics, and vasopressors. Monitoring organ function is critical.

---

**Q.50** Which hormone is deficient in Addison's disease?

- A. Cortisol
- B. Insulin
- C. Thyroxine
- D. Growth hormone

**Answer:** A

**Sol:**

Correct answer: (a)

Explanation:

Addison's disease is characterized by adrenal insufficiency, leading to deficiency of cortisol and aldosterone. Cortisol plays a vital role in stress response, metabolism, and immune function. Its deficiency results in fatigue, hypotension, and hyperpigmentation.

Aldosterone deficiency leads to sodium loss and potassium retention, causing electrolyte imbalance. Patients may present with dehydration and weakness. Stress can precipitate an Addisonian crisis, which is life-threatening.

Nursing management includes hormone replacement therapy and monitoring electrolytes. Patient education about lifelong medication adherence is crucial. Early recognition of crisis symptoms is essential.

---

**Q.51** Which condition causes "coffee ground" vomitus?

- A. Gastritis
- B. Upper GI bleeding
- C. Appendicitis
- D. Pancreatitis

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Coffee ground vomitus indicates upper gastrointestinal bleeding, where blood has been partially digested by gastric acid. It appears dark and granular. Common causes include peptic ulcers and gastric erosions.

This condition requires immediate evaluation to prevent severe blood loss. Associated symptoms may include melena and anemia. Endoscopy is often used for diagnosis.

Nursing care includes monitoring vital signs and hemoglobin levels. Patients may require IV fluids and blood transfusion. Prompt intervention is critical.

---

**Q.52** Which condition leads to increased intracranial pressure?

- A. Hypotension
- B. Brain tumor
- C. Anemia
- D. Hypoglycemia

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Brain tumors can increase intracranial pressure (ICP) by occupying space within the skull. This leads to compression of brain structures and impaired cerebral perfusion. Symptoms include headache, vomiting, and altered consciousness.

As ICP rises, it can cause herniation, which is life-threatening. Early detection is crucial to prevent complications. Diagnostic imaging confirms the condition.

Nursing care includes monitoring neurological status and maintaining airway. Measures to reduce ICP, such as elevating the head of the bed, are implemented. Prompt intervention is necessary.

---

**Q.53** A patient with acute pancreatitis develops Cullen's sign. This indicates:

- A. Retroperitoneal hemorrhage
- B. Periumbilical ecchymosis
- C. Hepatic failure
- D. Portal hypertension

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Cullen's sign refers to bluish discoloration around the umbilicus and is a clinical indicator of intra-abdominal bleeding, commonly associated with severe acute pancreatitis. It occurs due to tracking of pancreatic enzymes and blood through fascial planes to the umbilical region. This sign is considered a late manifestation and indicates significant disease severity. Recognition of Cullen's sign helps in early identification of complications and guides urgent management.

Acute pancreatitis leads to autodigestion of pancreatic tissue by enzymes, resulting in inflammation and hemorrhage. The leakage of blood into subcutaneous tissues causes the characteristic discoloration. It is often accompanied by Grey Turner's sign, which appears on the flanks. Both signs are predictors of poor prognosis and increased mortality.

Nursing management involves close monitoring of vital signs, fluid balance, and pain levels. Early recognition allows prompt escalation of care, including ICU admission if needed. Supportive therapy such as IV fluids, analgesics, and nutritional support plays a key role in management.

**Q.54** Which condition leads to "pitting edema"?

- A. Dehydration
- B. Heart failure
- C. Hyperthyroidism
- D. Anemia

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Pitting edema occurs when fluid accumulates in the interstitial space, commonly seen in heart failure. Increased venous pressure leads to fluid leakage into tissues. Pressing the skin leaves an indentation.

Heart failure reduces cardiac output and causes fluid retention. This leads to swelling in dependent areas such as legs. It is an important clinical sign.

Nursing management includes monitoring fluid balance and administering diuretics. Elevating limbs helps reduce edema. Patient education is important.

**Q.55** Which electrolyte imbalance causes tetany?

- A. Hyperkalemia
- B. Hypocalcemia
- C. Hyponatremia
- D. Hypomagnesemia

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Hypocalcemia increases neuromuscular excitability, leading to tetany, muscle spasms, and seizures. Calcium plays a crucial role in nerve conduction and muscle contraction. Low levels disrupt normal function.

Signs include Chvostek's and Trousseau's signs. Severe hypocalcemia can cause life-threatening complications. It often occurs after thyroid surgery or in vitamin D deficiency.

Nursing care includes monitoring calcium levels and administering supplements. Emergency treatment may involve IV calcium. Patient education is important.

**Q.56** Which condition is indicated by positive Murphy's sign?

- A. Appendicitis
- B. Cholecystitis

- C. Pancreatitis
- D. Hepatitis

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Murphy's sign is a clinical indicator of acute cholecystitis, characterized by pain and inspiratory arrest during palpation of the right upper quadrant. It occurs due to inflammation of the gallbladder. This sign helps differentiate cholecystitis from other abdominal conditions.

The gallbladder becomes inflamed, usually due to obstruction by gallstones. This leads to localized pain, fever, and leukocytosis. Early diagnosis is important to prevent complications such as perforation.

Nursing management includes pain control, monitoring vital signs, and preparing for possible surgery. Patients are often kept NPO and given IV fluids. Education about dietary modifications is also important.

---

**Q.57** A patient with liver cirrhosis develops ascites. Which mechanism is primarily responsible?

- A. Increased oncotic pressure
- B. Decreased hydrostatic pressure
- C. Portal hypertension
- D. Increased lymphatic drainage

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Ascites in liver cirrhosis is primarily caused by portal hypertension, which leads to increased hydrostatic pressure in the portal venous system. This pressure forces fluid from the intravascular compartment into the peritoneal cavity. Additionally, liver dysfunction reduces albumin synthesis, further aggravating fluid accumulation. These combined mechanisms contribute significantly to ascites formation.

Portal hypertension results from resistance to blood flow through the cirrhotic liver, causing congestion in the portal circulation. This leads to fluid leakage into surrounding tissues and spaces. Secondary hyperaldosteronism also promotes sodium and water retention, worsening ascites. The condition often indicates advanced liver disease.

Nursing management includes monitoring abdominal girth, fluid balance, and weight. Patients may require diuretics and paracentesis for fluid removal. Dietary sodium restriction and patient education are essential components of care.

---

**Q.58** A patient with COPD is given oxygen therapy. Which complication should the nurse monitor?

- A. Hypercapnia
- B. Hypoglycemia
- C. Hypertension
- D. Metabolic alkalosis

**Answer:** A

**Sol:**

Correct answer: (a)

Explanation:

In COPD patients, oxygen therapy must be carefully administered because excessive oxygen can suppress the hypoxic drive to breathe, leading to carbon dioxide retention (hypercapnia). This can result in respiratory acidosis and decreased level of consciousness.

COPD patients rely partially on hypoxia rather than hypercapnia to stimulate respiration. Administering high oxygen concentrations can blunt this drive. Therefore, oxygen is typically given at low flow rates.

Nursing responsibilities include monitoring oxygen saturation, respiratory rate, and ABG values. Signs of CO<sub>2</sub> retention such as confusion or drowsiness should be reported immediately. Patient education about oxygen therapy is also important.

---

**Q.59** Which complication is most common after thyroidectomy?

- A. Hypercalcemia
- B. Hypocalcemia
- C. Hypernatremia
- D. Hypokalemia

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Hypocalcemia is a common complication after thyroidectomy due to accidental removal or damage to the parathyroid glands. These glands regulate calcium levels in the body. Symptoms include tingling, muscle cramps, and tetany.

Low calcium levels can lead to serious complications such as laryngospasm and seizures. Early signs include Chvostek's and Trousseau's signs.

Monitoring calcium levels postoperatively is essential.

Nursing care includes observing for signs of hypocalcemia and keeping calcium gluconate ready. Patient education on symptoms is important.

Prompt treatment prevents life-threatening complications.

---

**Q.60** A patient develops sudden dyspnea after surgery. Which condition is most likely?

- A. Pneumonia
- B. Pulmonary embolism
- C. Atelectasis
- D. Bronchitis

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Sudden dyspnea after surgery is most suggestive of pulmonary embolism (PE), especially in patients with risk factors such as immobility. A clot travels to the lungs, obstructing pulmonary circulation. This leads to impaired gas exchange and hypoxia.

Symptoms may include chest pain, tachycardia, and hemoptysis. PE is a life-threatening emergency requiring immediate intervention. Early recognition significantly improves outcomes.

Nursing care includes monitoring oxygen saturation and vital signs. Anticoagulant therapy is initiated promptly. Preventive measures include early mobilization and use of compression devices.

---

**Q.61** Which of the following is the unit of measurement used in bacteriology?

- A. Joule
- B. Newton
- C. Micron
- D. Pascal

**Answer:** C

**Sol:**

Ans. (c)  
Sol. **Micron**, also known as a micrometer ( $\mu\text{m}$ ), is the unit of measurement commonly used in bacteriology to measure the size of bacteria and other microorganisms. One micron equals one-millionth of a meter.

**Joule** is a unit of energy.

**Newton** is a unit of force.

**Pascal** is a unit of pressure.

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**Q.62** A patient is in the stage of dying and says, "I just want to see my grandchildren's birth, then I am ready." Identify the stage of dying.

- A. Acceptance
- B. Anger
- C. Bargaining
- D. Depression

**Answer:** C

**Sol:**

Ans. (c) Bargaining

Sol. Bargaining is the third stage in Kubler-Ross's Five Stages of Grief. In this stage, patients attempt to negotiate or make deals in an attempt to delay death or gain more time. This often includes promises to a higher power or setting personal milestones before they are ready to accept death.

Explanation of each option:

· (a) Acceptance – Incorrect. Acceptance occurs when a patient comes to terms with death without resistance or emotional struggle.

- (b) Anger – Incorrect. Anger is characterized by resentment and frustration about the situation.
- (c) Bargaining – Correct answer. This stage involves making deals or seeking extensions to life events before accepting death.
- (d) Depression – Incorrect. Depression is marked by sadness, withdrawal, and despair over impending death.

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**Q.63** Which level of disinfection is effective against mycobacteria, most viruses, and fungi but not spores?

- A. High-level disinfection
- B. Intermediate-level disinfection
- C. Low-level disinfection
- D. Sterilization

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Intermediate-level disinfection is capable of destroying mycobacteria, most viruses, and fungi but not bacterial spores. It is commonly used for non-critical items such as stethoscopes and blood pressure cuffs. Agents like alcohol and certain phenolics are used for this purpose. It provides a balance between efficacy and practicality.

High-level disinfection can kill spores with prolonged exposure, while low-level disinfection is limited to vegetative bacteria and some viruses.

Sterilization eliminates all forms of life, including spores. Thus, intermediate-level disinfection occupies a middle position in the hierarchy.

Nurses must select appropriate disinfection levels based on the item's use. Improper selection may lead to infection risk. Understanding disinfection levels ensures safe patient care. It is a key component of infection control.

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**Q.64** Which indicator is most appropriate for measuring the effectiveness of family planning programs?

- A. Crude birth rate
- B. Total fertility rate
- C. Couple protection rate
- D. General fertility rate

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Couple protection rate (CPR) is the proportion of eligible couples effectively protected against childbirth through contraceptive methods. It directly reflects the coverage and utilization of family planning services in a community. Unlike crude birth rate, CPR specifically measures intervention impact rather than general population trends. It is therefore a more program-specific indicator.

Total fertility rate provides an average number of children per woman but does not directly indicate contraceptive use. General fertility rate measures births in reproductive age women but is not sensitive to program interventions. CPR, however, captures both awareness and accessibility of contraceptive methods. It is widely used to evaluate family planning initiatives.

Community health nurses play a significant role in improving CPR through counseling and service delivery.

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**Q.65** Which waste category includes contaminated recyclable waste?

- A. Yellow
- B. Red
- C. Blue
- D. White

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Red category includes contaminated recyclable waste such as tubing, IV sets, and catheters. These items are disinfected and recycled. Proper segregation ensures safe reuse. It reduces environmental burden.

Yellow is for anatomical waste. Blue is for glassware. White is for sharps. Red specifically handles recyclable contaminated items.

Nurses must segregate waste correctly. It improves efficiency. It reduces hazards. Proper disposal is essential.

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**Q.66** Which epidemiological measure is most appropriate for assessing risk?

- A. Incidence rate
- B. Prevalence rate
- C. Case fatality rate
- D. Attack rate

**Answer:** A

**Sol:**

Correct answer: (a)

Explanation:

Incidence rate measures the occurrence of new cases in a population over a period of time. It is the best indicator of risk of developing a disease. It helps in identifying causative factors.

Prevalence includes both new and existing cases, thus reflecting disease burden rather than risk. Case fatality rate indicates severity. Attack rate is used in outbreaks.

Community health nurses use incidence to monitor disease trends. It helps in planning preventive strategies. Accurate measurement is essential for epidemiological studies.

**Q.67** Which component of communication ensures feedback in a communication process?

- A. Sender
- B. Message
- C. Receiver
- D. Channel

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

The receiver plays a key role in completing the communication loop by providing feedback. Feedback indicates whether the message has been understood correctly. It is essential for effective communication.

Without feedback, communication remains incomplete. Barriers such as noise or misunderstanding can distort the message. Feedback helps identify and correct such issues.

In community health nursing, effective communication is crucial for health education. Nurses must ensure feedback from patients and communities. This improves understanding and compliance.

**Q.68** Which indicator reflects fertility level in a population most accurately?

- A. Crude birth rate
- B. General fertility rate
- C. Total fertility rate
- D. Net reproduction rate

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Total fertility rate (TFR) represents the average number of children a woman would have during her reproductive years. It is the most accurate measure of fertility. It is independent of population age structure.

Crude birth rate is affected by population composition. General fertility rate is less comprehensive. Net reproduction rate focuses on female births. TFR is widely used in demographic studies. Nurses should understand population trends. It helps in policy planning.

**Q.69** Which component of the chain of infection refers to the place where microorganisms normally live and multiply?

- A. Host
- B. Reservoir
- C. Vector
- D. Portal of entry

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

The reservoir is the natural habitat where microorganisms live, grow, and multiply. It can be a human, animal, or environmental source such as soil or water. The reservoir is essential for the survival of pathogens. Without it, the organism cannot sustain itself in nature.

The host is the organism that harbors the infection, while the portal of entry is the route through which pathogens enter. A vector is a living carrier that transmits infection, such as mosquitoes. The reservoir specifically refers to the origin and maintenance site of the pathogen.

Nurses must identify reservoirs to control infections effectively. Eliminating or controlling reservoirs reduces disease spread. Proper sanitation and hygiene are essential measures. Understanding this concept strengthens infection prevention strategies.

**Q.70** A preterm neonate develops respiratory distress syndrome (RDS). Which cellular deficiency is primarily responsible?

- A. Type I pneumocytes
- B. Type II pneumocytes
- C. Alveolar macrophages
- D. Clara cells

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Respiratory distress syndrome in preterm neonates is primarily due to deficiency of surfactant. Surfactant is produced by type II pneumocytes and reduces surface tension within alveoli. Its absence leads to alveolar collapse.

Preterm infants have immature lungs with insufficient surfactant production. This results in increased work of breathing and hypoxia. The condition typically presents shortly after birth.

Management includes surfactant replacement therapy and respiratory support. Nurses must monitor oxygenation and ventilatory status closely. Early intervention improves survival.

**Q.71** What is the other term for recovery from an illness?

- A. Rationalisation
- B. Reaction formation
- C. Regression
- D. Remission

**Answer:** D

**Sol:**

Ans (d)

Sol. Rationalisation: This is a psychological defense mechanism where an individual justifies or explains behaviors or decisions with logical reasons, even if these are not entirely true. It is unrelated to recovery from illness.

Reaction formation: This is another psychological defense mechanism where a person behaves in a way opposite to their actual feelings or desires. It is not connected to illness recovery.

Regression: This refers to a return to earlier developmental behaviors or stages, often as a response to stress. It does not signify recovery from illness.

Remission: This term is used to describe a period during which symptoms of an illness are reduced or disappear. It is commonly used in the context of chronic diseases such as cancer, indicating recovery or improvement in the condition.

**Q.72** A child presents with tetany. Which electrolyte imbalance is responsible?

- A. Hyperkalemia
- B. Hypocalcemia
- C. Hypermagnesemia
- D. Hypomagnesemia

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Tetany is caused by increased neuromuscular excitability. Hypocalcemia lowers the threshold for nerve activation. This leads to muscle spasms. Signs include Chvostek and Trousseau signs. Early detection is important. It may be life-threatening. Treatment includes calcium supplementation. Nurses must monitor ECG. Prompt care prevents complications.

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**Q.73** Which type of immunity is transferred from mother to fetus via placenta?

- A. Active natural immunity
- B. Passive natural immunity
- C. Active artificial immunity
- D. Passive artificial immunity

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Passive natural immunity is transferred from mother to fetus through IgG antibodies via placenta. It provides temporary protection. This is crucial in early life.

The immunity is short-lived and wanes over time. It protects against infections during infancy. Breastfeeding also provides IgA-mediated protection. Nurses should promote maternal health and immunization. Understanding immunity helps in vaccination planning. It ensures neonatal protection.

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**Q.74** Which condition leads to "maple syrup odor" urine?

- A. PKU
- B. MSUD
- C. Tyrosinemia
- D. Homocystinuria

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Maple syrup urine disease is due to defect in branched-chain amino acid metabolism. It leads to accumulation of leucine, isoleucine, and valine. Urine smells like maple syrup.

It presents in neonates. Early diagnosis is critical. Untreated cases lead to neurological damage.

Dietary restriction is key. Nurses must educate parents. Early treatment improves prognosis.

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**Q.75** Which sterilization indicator confirms effectiveness of autoclaving?

- A. Chemical indicator
- B. Physical indicator
- C. Biological indicator
- D. Mechanical indicator

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Biological indicators are the most reliable method to confirm sterilization. They use spores that are highly resistant to heat. If spores are destroyed, sterilization is successful. This provides the highest level of assurance.

Chemical indicators change color but are less reliable. Physical indicators monitor temperature and pressure. Biological indicators directly test effectiveness.

Nurses must ensure proper sterilization. Monitoring indicators is essential. It ensures patient safety. Proper technique prevents infection.

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**Q.76** Which immunoglobulin is primarily involved in mucosal immunity in children?

- A. IgG
- B. IgM

- C. IgA
- D. IgE

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

IgA is the प्रमुख immunoglobulin in mucosal surfaces such as respiratory and gastrointestinal tracts. It plays a key role in protecting against pathogens entering through these routes. Secretory IgA is found in saliva, tears, and breast milk.

It prevents microbial adherence and colonization. Breastfeeding provides passive immunity through IgA. This is especially important in infants.

Nurses should promote breastfeeding for immune protection. Understanding immunology helps in infection prevention. IgA deficiency can predispose to recurrent infections.

**Q.77** A child presents with prolonged fever, conjunctivitis, strawberry tongue, and coronary artery aneurysm. What is the diagnosis?

- A. Scarlet fever
- B. Rheumatic fever
- C. Kawasaki disease
- D. Toxic shock syndrome

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Kawasaki disease is a vasculitis affecting medium-sized arteries, particularly coronary arteries. It presents with prolonged fever, mucocutaneous inflammation, and lymphadenopathy. Strawberry tongue and conjunctivitis are characteristic findings.

The most serious complication is coronary artery aneurysm. Early treatment with intravenous immunoglobulin reduces this risk. Diagnosis is clinical based on criteria.

Nurses must monitor cardiac status and administer IVIG. Long-term follow-up is essential. Early recognition prevents life-threatening complications.

**Q.78** Which PPE is essential for preventing airborne transmission?

- A. Surgical mask
- B. Gloves
- C. N95 respirator
- D. Gown

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

The N95 respirator is specifically designed to prevent inhalation of airborne particles. It filters at least 95% of airborne pathogens and provides a tight facial seal. It is essential in diseases like tuberculosis and COVID-19. Proper fit testing is required for effectiveness.

Surgical masks protect against droplets but not airborne particles. Gloves and gowns protect against contact transmission. Only N95 respirators are suitable for airborne precautions. Thus, they are critical in infection control.

Nurses must use N95 masks in appropriate situations. Incorrect use can increase infection risk. Training in PPE use is essential. Proper protection ensures safety of healthcare workers.

**Q.79** In psychiatric nursing, which defense mechanism is seen when a student blames the teacher for poor exam results?

- A. Projection
- B. Regression
- C. Sublimation
- D. Rationalization

**Answer:** A

**Sol:**

Correct Answer: (a)

Information Booster:

- Projection = attributing one's feelings to others.
- Common in paranoid personalities.
- Helps temporarily reduce anxiety.
- Nursing: encourage insight through therapeutic communication.
- Avoid direct confrontation during early therapy.
- Identify triggers increasing defensive behavior.
- Build trust and maintain consistency
- Document patient's behavioral patterns for care planning.

**Additional Knowledge:**

- Regression → reverting to earlier developmental stage.
- Sublimation → channeling drives into acceptable activities.
- Rationalization → giving logical excuses for behavior.
- Defense mechanisms are unconscious protective strategies.
- Prolonged use interferes with emotional growth.
- Insight-oriented therapy aids in adaptive coping.

**Q.80** Which of the following is a common myth about schizophrenia?

- A. It is a brain disorder.
- B. People with schizophrenia are violent.
- C. Treatment can help manage symptoms.
- D. It affects daily life.

**Answer:** B

**Sol:**

**Answer:** (b) People with schizophrenia are violent

**Explanation:** A common myth about schizophrenia is that people with the condition are inherently violent or dangerous. In reality, most individuals with schizophrenia are not violent. In fact, they are more likely to be victims of violence rather than perpetrators. Schizophrenia is a brain disorder that affects thinking, emotions, and behavior, and with proper treatment and support, many people with the disorder can lead fulfilling lives. The myth of violence associated with schizophrenia contributes to the stigma surrounding mental illness, making it harder for individuals to seek help.

**Q.81** The most effective nutritional intervention to reduce neural tube defects is:

- A. High protein diet
- B. Folic acid supplementation
- C. Vitamin D supplementation
- D. Iron-rich diet

**Answer:** B

**Sol:**

Folic acid taken before conception and during early pregnancy greatly reduces neural tube defects. It supports DNA synthesis and cell division required for neural tube closure. This is a globally proven intervention. Option explanations: (a) Protein intake does not prevent NTDs. (b) Correct – folate deficiency is a major NTD cause. (c) Vitamin D is unrelated to neural tube closure. (d) Iron prevents anemia, not NTDs.

**Q.82** The most common cause of postpartum hemorrhage is:

- A. Retained placenta
- B. Uterine atony
- C. Genital tract trauma
- D. Coagulation disorders

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

Postpartum hemorrhage (PPH) is a leading cause of maternal mortality worldwide. Uterine atony, where the uterus fails to contract effectively after delivery, is the most common cause. This leads to continued bleeding from placental site vessels.

Risk factors include prolonged labor, overdistended uterus, and multiple pregnancies. Early identification and management are crucial to prevent severe complications. Nurses should assess uterine tone frequently in the immediate postpartum period.

Management includes uterine massage, administration of uterotonics like oxytocin, and fluid resuscitation. If unresponsive, advanced interventions such as surgical procedures may be required. Prevention and early action are key components.

**Q.83** Patients on MAO inhibitors must avoid foods rich in tyramine because:

- A. Tyramine causes hypoglycemia with MAOIs
- B. Tyramine increases serotonin, leading to serotonin syndrome
- C. Tyramine triggers hypertensive crisis due to norepinephrine release
- D. Tyramine inhibits breakdown of dopamine

**Answer:** C**Sol:** Tyramine escapes breakdown when MAO is inhibited → displaces norepinephrine → hypertensive crisis ("cheese reaction").

Explanation of options: (a) **X** Tyramine has no effect on blood glucose. (b) **X** Serotonin syndrome occurs with SSRI + MAOI, not just tyramine. (c) **✓**

Correct; tyramine → norepinephrine release → severe hypertension. (d) **X** Tyramine is metabolized by MAO, not dopamine breakdown inhibitor.

**Q.84** Which receptor type is associated with ion channel regulation?

- A. G-protein coupled receptor
- B. Tyrosine kinase receptor
- C. Ligand-gated ion channel
- D. Nuclear receptor

**Answer:** C**Sol:**

Correct answer: (c)

Explanation:

Ligand-gated ion channels are receptor types that directly regulate ion flow across cell membranes. When a ligand binds, the channel opens, allowing ions such as sodium or calcium to pass through. This leads to rapid cellular responses.

G-protein coupled receptors act through second messengers and are slower in action. Tyrosine kinase receptors are involved in growth and metabolic regulation. Nuclear receptors influence gene transcription and have delayed effects.

These ion channel receptors are important in neurotransmission. Drugs acting on them can produce immediate effects. Nurses must understand receptor types for pharmacodynamic knowledge.

**Q.85** Which drug calculation method is most accurate for pediatric dosing in critical care settings?

- A. Young's formula
- B. Clark's formula
- C. Body surface area method
- D. Age-based dosing

**Answer:** C**Sol:**

Correct answer: (c)

Explanation:

The body surface area (BSA) method is considered the most accurate for pediatric drug dosing, especially in critical care and chemotherapy. It accounts for both weight and height, providing a better estimate of metabolic activity. This method closely correlates with physiological functions such as cardiac output and renal clearance. Therefore, it ensures precise dosing.

Young's and Clark's formulas are simpler but less accurate as they rely on age or weight alone. These methods may not reflect true metabolic capacity, especially in critically ill children. Age-based dosing is even less reliable due to individual variability. Thus, BSA is preferred in high-risk situations.

Nurses must calculate BSA carefully using standardized charts or formulas. Errors in calculation can lead to significant underdosing or toxicity.

Double-checking calculations is essential in pediatric care. Accurate dosing improves safety and therapeutic outcomes.

**Q.86** Which hormone is primarily responsible for uterine contractions during labor?

- A. Estrogen
- B. Progesterone
- C. Oxytocin
- D. Relaxin

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Oxytocin is a peptide hormone secreted by the posterior pituitary gland and plays a central role in stimulating uterine contractions. Its release increases significantly during labor and works via positive feedback mechanisms. It enhances the strength, frequency, and coordination of contractions.

Estrogen increases uterine sensitivity to oxytocin by upregulating receptors, while progesterone maintains uterine relaxation during pregnancy.

Relaxin helps soften the cervix and pelvic ligaments but does not initiate contractions.

Clinically, synthetic oxytocin is used to induce or augment labor. Monitoring is essential to avoid complications such as uterine hyperstimulation.

Proper understanding of hormonal interplay is crucial in obstetric care.

**Q.87** What are the formal processes for testing a hypothesis?

- A. State, formulate, analyze and interpret
- B. State, analyze, formulate and interpret
- C. State, formulate, interpret and analyze
- D. Formulate, state, analyze and interpret

**Answer:** A

**Sol:** Ans(a) Sol. State, formulate, analyze and interpret: This sequence accurately describes the standard steps in hypothesis testing.

State, analyze, formulate and interpret: Analysis cannot be performed before formulating the hypothesis and collecting data.

State, formulate, interpret and analyze: Interpretation must follow analysis, not precede it.

Formulate, state, analyze and interpret: The hypothesis must be stated before formulating the research process.

**Q.88** Memory traces are present in the mind in the form of:

- A. Diagrams
- B. Engrams
- C. Pictures
- D. Signals

**Answer:** B

**Sol:**

Ans. (b)

**Sol.** Engrams are theoretical physical or biochemical traces of memory stored in the brain. They represent how experiences are encoded and retained in the brain's neural pathways. The concept suggests that every memory has a neural footprint, known as an engram.

**Explanation of each option:**

- (a) Diagrams – Used as visual aids for learning, not actual memory traces.
- (b) Engrams – Correct answer. Hypothetical structures in the brain representing stored memories.
- (c) Pictures – May be part of memory recall but are not memory traces themselves.
- (d) Signals – Related to neural transmission, but not the stored form of memory.

**Q.89** Patient on rifampicin reports orange-red urine. Nurse should:

- A. Stop drug immediately
- B. Inform patient it is a harmless expected effect
- C. Start IV fluids to flush drug
- D. Test urine for blood

**Answer:** B

**Sol:** Rifampicin colors secretions due to drug pigment — harmless but must inform beforehand for compliance. (a) Discontinuation risks TB resistance. (b) ✓ Education prevents fear and non-adherence. (c) Hydration doesn't affect color change. (d) Blood gives dark brown cola-colored urine, not bright red-orange.

**Q.90** Which drug calculation formula is correct?

- A. Dose required = (Available dose / Desired dose) × Volume
- B. Dose required = (Desired dose / Available dose) × Volume
- C. Dose required = Desired dose × Available dose
- D. Dose required = Volume / Desired dose

**Answer:** B

**Sol:**

Correct answer: (b)

Explanation:

The correct formula for drug calculation is: Dose required = (Desired dose / Available dose) × Volume. This formula helps determine the amount of medication to administer based on available concentration. It is widely used in clinical settings.

Incorrect formulas may lead to medication errors. Accurate calculation ensures patient safety. Nurses must double-check calculations before administration.

Drug calculation is a fundamental nursing skill. Errors can lead to serious consequences. Proper understanding ensures safe and effective medication administration.

**Q.91** A 26-year-old woman presents with scanty menstruation, infertility, obesity, and hirsutism. Which endocrine abnormality is most likely associated with her condition?

- A. Decreased androgen production
- B. Hyperprolactinemia due to pituitary necrosis
- C. Insulin resistance with hyperandrogenism
- D. Hypothyroidism with low LH levels

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

The features described are strongly suggestive of polycystic ovarian syndrome. PCOS is commonly associated with insulin resistance and increased ovarian androgen production, leading to hirsutism, irregular menses, anovulation, and infertility. Obesity often worsens the metabolic and reproductive manifestations of the disorder. The endocrine imbalance involves altered gonadotropin secretion and excess androgen effect. Decreased androgen production would not explain hirsutism. Hyperprolactinemia due to pituitary necrosis is related to Sheehan syndrome and presents with lactation failure and amenorrhea after severe postpartum hemorrhage, not obesity with hyperandrogenic features. Hypothyroidism may disturb menstruation but does not classically account for this full constellation. Therefore, insulin resistance with hyperandrogenism best fits the scenario.

Management includes weight reduction, lifestyle modification, cycle regulation, ovulation induction for infertility, and treatment of cosmetic symptoms. Nurses play an important role in counseling regarding long-term risks such as diabetes, endometrial hyperplasia, and cardiovascular disease. Psychological support is also important because body image and fertility concerns are common. Early recognition allows both reproductive and metabolic management.

**Q.92** The primary reason for using medium-chain triglycerides (MCT) in malabsorption patients is:

- A. They increase insulin release
- B. They bypass lymphatic absorption
- C. They are stored easily in adipose tissue
- D. They provide essential fatty acids

**Answer:** B

**Sol:** MCTs are absorbed directly into the portal vein without bile salts, making them ideal for patients with fat malabsorption or pancreatic insufficiency. Option explanations: (a) MCTs do not significantly enhance insulin secretion. (b) They bypass lymphatic chylomicron formation, improving absorption. (c) They are rapidly oxidized, not stored easily. (d) MCTs do not supply essential fatty acids.

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**Q.93** A clinical feature of a patient with major depression includes:

- (a) Psychomotor agitation
- (b) Insomnia
- (c) Feelings of worthlessness
- (d) Increased libido

A. A, B, C

B. B, C, D

C. A, B, D

D. A, C, D

**Answer:** A

**Sol: Ans. (a)**

As per DSM criteria for major depressive disorder, five or more of the following symptoms must be present during the same two-week period and represent a change from previous functioning:

1. Depressed mood most of the day
2. Markedly diminished interest or pleasure in all activities
3. Significant weight loss when not dieting or weight gain
4. Insomnia or hypersomnia every day
5. Psychomotor agitation or retardation
6. Fatigue or loss of energy every day
7. Feelings of worthlessness or inappropriate guilt
8. Diminished ability to think and concentrate
9. Recurrent thoughts of death

In this context, psychomotor agitation, insomnia, and feelings of worthlessness are typical features of major depression, while increased libido is not commonly observed.

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**Q.94** Which pharmacokinetic parameter is primarily responsible for determining the time required to reach steady-state concentration?

- A. Clearance
- B. Volume of distribution
- C. Half-life
- D. Bioavailability

**Answer:** C

**Sol:**

Correct answer: (c)

Explanation:

Half-life is the time required for the plasma concentration of a drug to reduce by 50%. It is the primary determinant of how long it takes to reach steady-state concentration during repeated dosing. Typically, steady-state is achieved after about 4–5 half-lives. This relationship is consistent regardless of the drug dose.

Clearance determines the steady-state concentration but not the time required to reach it. Volume of distribution affects loading dose, while bioavailability influences the fraction of drug absorbed. None of these parameters directly determine the time to steady-state. Hence, half-life is the key factor.

In clinical practice, understanding half-life helps nurses schedule dosing intervals appropriately. It ensures that drug levels remain within therapeutic range. Misinterpretation can lead to accumulation or subtherapeutic levels. Therefore, knowledge of half-life is essential for safe drug administration.

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**Q.95** Which one of the following experiences does NOT easily reach awareness?

- A. Pre-conscious
- B. Semi-conscious
- C. Conscious
- D. Unconscious

**Answer:** D

**Sol:**

Ans (d)

Sol. Pre-conscious: This refers to thoughts or memories that are not currently in conscious awareness but can be easily brought to consciousness with little effort.

Semi-conscious: This is a state where a person is partially aware, typically occurring when someone is in a state between sleep and full wakefulness, and some information may not easily reach full awareness.

Conscious: This refers to thoughts, feelings, and experiences that a person is fully aware of at any given moment. These are the experiences that are easily accessible to awareness.

Unconscious: This refers to mental processes that are not easily accessible to conscious awareness. Unconscious thoughts and memories are typically hidden and can only be accessed with significant effort, such as through psychoanalysis.

**Q.96** The condition in which false beliefs are firmly maintained even though they are not shared by others is called:

- A. Delusion
- B. Illusion
- C. Hallucination
- D. Delirium

**Answer:** A

**Sol:** Ans(a) Sol. Delusion: A delusion is a false belief that is strongly held despite clear evidence to the contrary and is not shared by others in the same cultural or social context. Delusions are commonly seen in psychiatric conditions such as schizophrenia and delusional disorder.

Illusion: An illusion is a misinterpretation of a real external stimulus. For example, mistaking a rope for a snake is an illusion. It involves incorrect perception rather than false beliefs.

Hallucination: A hallucination is a sensory experience of something that does not exist in reality, such as hearing voices or seeing things that are not there. It is different from a delusion, which is a false belief.

Delirium: Delirium is an acute state of confusion and altered consciousness often caused by medical conditions, substance withdrawal, or infections. It is characterized by disorientation, not persistent false beliefs.

**Q.97** The area of inquiry in the grounded theory approach is

- A. Social structural process within social setting
- B. Behaviour observed over time in natural context
- C. Holistic view of culture
- D. Lived in experiences

**Answer:** A

**Sol: Ans. (a)**

**Sol. Grounded Theory** is a qualitative research methodology that aims to **generate or discover a theory** from data systematically gathered and analyzed. It is primarily focused on understanding **social processes**, especially **social interactions, actions, and structural processes** within a specific **social setting**.

**Explanation of each option:**

- **(a) Social structural process within social setting: Correct answer.** This is the core focus of grounded theory—understanding how people act and interact within social contexts.
- **(b) Behaviour observed over time in natural context:** This describes **ethnography**, which involves long-term observation.
- **(c) Holistic view of culture:** This is related to **ethnographic** or **anthropological** research methods.
- **(d) Lived in experiences:** This refers to **phenomenology**, which explores the meaning of lived experiences of individuals.

**Q.98** Which fiber type most effectively lowers serum LDL cholesterol by binding bile acids?

- A. Cellulose
- B. Lignin
- C. Soluble viscous fiber
- D. Resistant starch

**Answer:** C

**Sol:** Soluble viscous fibers like pectin,  $\beta$ -glucan, and guar gum reduce LDL by trapping bile acids, increasing their excretion. This forces the liver to use cholesterol for bile synthesis.

Option explanations: (a) Cellulose is insoluble and mainly increases stool bulk without strong LDL-lowering effect. (b) Lignin is non-carbohydrate fiber with minimal cholesterol impact. (c) Soluble viscous fibers bind bile acids effectively, lowering LDL significantly. (d) Resistant starch improves gut health but has modest effect on LDL.

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**Q.99** Which factor decreases drug absorption from the gastrointestinal tract?

- A. Increased blood flow
- B. Increased surface area
- C. High lipid solubility
- D. Ionized drug form

**Answer:** D

**Sol:**

Correct answer: (d)

Explanation:

Ionized drugs are less lipid-soluble and therefore poorly absorbed from the gastrointestinal tract. They cannot easily cross cell membranes. This reduces their bioavailability. Non-ionized forms are absorbed more readily.

Factors like increased blood flow and surface area enhance absorption. Lipid solubility also improves membrane permeability. Thus, ionization is a major limiting factor. It depends on pH and drug properties.

Nurses must consider drug formulation and pH effects. This influences drug effectiveness. Proper administration ensures optimal absorption.

Understanding this concept improves pharmacological care.

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**Q.100** The condition where a patient sees a rope and fears it to be a snake is called \_\_\_\_\_

- A. Depersonalization
- B. Hallucination
- C. Illusion
- D. Delusion

**Answer:** C

**Sol:**

Ans (c)

Sol. Depersonalization: This refers to a feeling of detachment or disconnection from one's own body or thoughts, where the person may feel like an outside observer of themselves. It does not involve misperception of objects.

Hallucination: This involves perceiving something that is not actually present, such as hearing voices or seeing things that aren't real. However, in this case, the patient is misperceiving the rope, not experiencing an entirely fabricated image.

Illusion: An illusion occurs when a real object (such as a rope) is misperceived or misinterpreted, in this case, as a snake. It is a misperception of something that exists in reality.

Delusion: This refers to a false belief that is strongly held despite evidence to the contrary, such as believing one is being persecuted or has special powers. It does not involve a misperception of sensory input.

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