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UGC NET MEMORY BASED QUESTION-PAPER 1

TOPICS ASKED IN UGC NET PAPER - 1 (8 JANUARY 2025 SHIFT- 2)

DI- TABLE BASED PERCENTAGE

P.D. – WASTE WATER TREATMENT, SOURCE OF METHANE

H.E.- VIKRAMSHILA UNIV, TAXILA

MATHS- RATIO, SPEED DISTANCE

LR- CODING DECODING

TEACHING- LEARNER CHARACTERISTICS, CONCEPT BASED, LMS

COMM.- MODELS

MEMORY BASED QUES

Q1. The ratio of the present ages of two persons A and B is 4:3. If 4 years ago, the ratio of their ages was 2:1. what is the present age of A and B (in years) respectively?

- (a) 8.6
- (b) 9.7
- (c) 12.9
- (d) 9.12

Ans.(a)

Sol. Given:

The ratio of present ages of A and B = 4:3

The ratio of ages of A and B, 4years ago =2:1

Formula Used:

Ratio and Proportions

Solution:

Let the ages of A and B are 4x and 3x respectively

Ages 4 years ago were:

4x-4 and 3x-4

$4x-4/3x-4 = 2:1$

$4x-4 = 2(3x-4)$

$4x-4 = 6x - 8$

$2x=4$

$x=2$

Present ages are 4x=8years and 3x =6 years

Hence option(a) is correct

Q2. Arrange the following ancient Indian institutions from east to west:

- A. Taxila
- B. Nalanda
- C. Vikramshila
- D. Sharada Peeth

Select the correct answer from the options below:

- (a) A, D, C, B
- (b) B, C, A, D
- (c) D, A, B, C
- (d) C, B, D, A

Ans.(d)

Sol. The correct answer is (d) C, B, D, A. Arranging from east to west:

1. **C. Vikramshila:** Located in present-day Bihar, eastern India, near the Bhagalpur district, it is the easternmost of these institutions.
2. **B. Nalanda:** Also situated in Bihar, but slightly west of Vikramshila, Nalanda was a renowned Buddhist center of learning in ancient Magadha.
3. **D. Sharada Peeth:** Located in present-day Pakistan-administered Kashmir (near Neelum Valley), it was a prominent site for Hindu and Buddhist scholarship.
4. **A. Taxila:** Situated in modern-day Pakistan, near Islamabad, it was the westernmost institution among these and known for its teachings in various subjects.

Information Booster: 1. **Vikramshila (C):** Established by the Pala dynasty, known for its specialization in Tantric Buddhism.

2. **Nalanda (B):** Famous for its extensive library and Buddhist teachings, attracting students from across Asia.

3. **Sharada Peeth (D):** An ancient center for Hindu and Buddhist studies, dedicated to goddess Saraswati.

4. **Taxila (A):** One of the earliest known universities, with diverse disciplines, including philosophy, medicine, and politics.

Q3. Where is Chanakya said to have composed his Arthashastra ?

- (a) Sarnatha
- (b) Takshashila
- (c) Nalanda
- (d) Vikramshila

Ans.(b)

Sol. *Arthashastra*, an ancient Indian treatise on statecraft, economic policy, and military strategy, is traditionally attributed to **Chanakya** (also known as Kautilya or Vishnugupta), a scholar and strategist. Chanakya is said to have composed this work in **Takshashila** (modern-day Taxila, Pakistan), an ancient center of learning that flourished in the Maurya period and was known for its advanced studies in various fields, including politics, philosophy, and economics. Takshashila was a hub for scholars, attracting students from across Asia, and it is where Chanakya is believed to have developed his ideas on governance and administration, later applied as an advisor to Emperor Chandragupta Maurya.

The other options are incorrect:

Sarnatha: Known as the place where Gautama Buddha first taught the Dharma, not related to Chanakya's work.

Nalanda: A major ancient university founded much later (5th century CE) and associated primarily with Buddhist learning.

Vikramshila: Another prominent Buddhist monastery and learning center established in the 8th century CE, long after Chanakya's time.

Information Booster: 1. **Authorship:** Chanakya is also known as Kautilya or Vishnugupta, recognized as the author of *Arthashastra*.

2. **Content:** The *Arthashastra* covers a wide array of topics, including economics, politics, diplomacy, warfare, law, and administration.

3. **Historical Context:** It was written around the 4th century BCE, during the Mauryan Empire.

4. **Influence:** The text has greatly influenced Indian political thought and administration.

5. **Takshashila:** An ancient learning center, known for training scholars in governance, medicine, and military skills.

6. **Modern Relevance:** *Arthashastra* remains a significant reference in studies of ancient Indian administration and realpolitik.

Q4. The image, sound and video data can be created in a number of file formats. In this context, which of the following are compressed file formats?

(A) JPEG

(B) MP3

(C) MIDI

(D) AVI

(E) MP4

Choose the correct answer from the options given below:

(a) (A), (B) and (E) only

(b) (C), (D) and (E) only

(c) (B), (C) and (D) only

(d) (A) and (E) only

Ans.(a)

Sol. The following are compressed file formats:

JPEG: A compressed image format.

MP3: A compressed audio format.

MP4: A compressed video format.

MIDI is not a compressed format but a protocol for musical instruments. AVI is an uncompressed or minimally compressed video format.

Important Key Points:

1. **JPEG, MP3, and MP4** are all commonly used compressed file formats.

2. **MIDI** is a protocol for audio data, while **AVI** is often used for uncompressed video.

Q5. Indigenous Knowledge and Resource Management System is at best can be considered as-

(a) Mitigation Response

(b) Adaptation Response

(c) Decarbonization Response

(d) Ethical Response

Ans.(b)

Sol. Indigenous knowledge and resource management systems have been honed over centuries to adapt to local environmental conditions, sustainable practices, and resource conservation techniques. These systems are closely linked to adaptation responses, as they help communities adjust to changes in climate, ecosystem shifts, and other environmental stressors. This adaptation often involves using traditional practices to manage resources sustainably and develop resilience to climate-related impacts.

1. **Adaptation Response:** Indigenous systems are typically designed to adapt to environmental changes, making them resilient in the face of shifting conditions. They may include water management techniques, crop diversity, and resource-sharing practices tailored to specific local challenges.

2. **Mitigation vs. Adaptation:** While **mitigation** seeks to reduce or eliminate the root causes of climate change (e.g., reducing greenhouse gases), **adaptation** focuses on adjusting to its inevitable effects. Indigenous knowledge is primarily about adaptation, helping communities live sustainably in response to their environmental realities.

3. **Ethical Response:** While ethical considerations are an essential part of indigenous knowledge systems, their core function is not necessarily about ethics in isolation, but rather about practical, sustainable management of resources.

4. **Decarbonization Response:** Indigenous knowledge can play a role in decarbonization, especially when it comes to sustainable land and resource management. However, it is more directly associated with adaptation and resilience-building strategies than with carbon-reduction efforts alone.

Information Booster:

1. **Indigenous Knowledge:** Indigenous knowledge systems often incorporate holistic views of nature and sustainability. These systems prioritize long-term ecological balance, conservation, and adaptation to climatic fluctuations.

2. **Adaptation Practices:** Examples of indigenous adaptation strategies include water harvesting in arid regions, crop diversification, agroforestry, and the use of natural buffers like wetlands to mitigate flooding.

3. **Key Differences Between Mitigation and Adaptation:** **Mitigation** seeks to address the root causes of environmental changes (e.g., reducing emissions), while **adaptation** focuses on strategies for coping with and adjusting to the outcomes of those changes.

Additional Knowledge:

Indigenous Resource Management: Practices like rotational grazing, traditional farming methods, and community-based forestry have been integral to sustainable resource management in indigenous cultures. These practices have been crucial for maintaining ecological balance and adapting to changing environmental conditions.

Resilience to Climate Change: Indigenous knowledge contributes significantly to community resilience. It provides tools for managing risks, ensuring food security, and supporting biodiversity, all of which are essential as climate change impacts intensify.

Q6. Which of the following are the characteristics of mental development of Adolescents?

- A. Increased ability to generalize the facts
- B. Development of memory and imagination
- C. Decreased ability to deal with abstraction
- D. Decreased ability to understand
- E. Increased ability to solve problems

Choose the correct answer from the options given below:

- (a) C, D and E only
- (b) A, B and E only
- (c) A, C and D.
- (d) C and D only

Ans.(b)

Sol. The characteristics of mental development during adolescence include the following:

1. Increased ability to generalize the facts: Adolescents develop the capacity to see broader patterns and make generalizations from specific information, which helps in forming more sophisticated understandings of various concepts.
2. Development of memory and imagination: There is significant growth in cognitive abilities during adolescence, including enhanced memory and imaginative capabilities, which are crucial for learning and creative thinking.
3. Increased ability to solve problems: Adolescents become better at critical thinking and problem-solving, utilizing more advanced cognitive processes to address complex issues.

Information Booster:

Decreased ability to deal with abstraction: This is incorrect as adolescents typically improve in their ability to understand and work with abstract concepts.

Decreased ability to understand: This is also incorrect. Adolescents generally show an increased ability to comprehend complex and abstract ideas.

Q7. Which of the following factors influence the effectiveness of support material?

- A. Clarity and comprehensibility
- B. Quantity of material
- C. Appropriateness for the learner's age and level
- D. Relevance to the learning objectives

Choose the correct answer from the options given below:

- (a) A only
- (b) A, C and D only
- (c) C and D only
- (d) B and D only

Ans.(b)

Sol. The factors that influence the effectiveness of support material are:

Clarity and comprehensibility (A)

Appropriateness for the learner's age and level (C)

Relevance to the learning objectives (D)

A. Clarity and comprehensibility: This is a crucial factor as learners cannot benefit from support material if they don't understand it.

C. Appropriateness for the learner's age and level: Support material should be tailored to the specific needs and abilities of the learners to be effective.

D. Relevance to the learning objectives: The content of the support material should directly relate to the specific learning goals of the learners.

So the correct answer is (b) A, C and D only

Q8. Match List-I with List-II:

List-I (Types of Communication)	List-II (Functional Character)
(A) Vertical	(I) Cross-functional
(B) Horizontal	(II) Used by specialists
(C) Diagonal	(III) Linear
(D) External	(IV) Often informal

Choose the correct answer from the options given below:

- (a) (A)-(I), (B)-(III), (C)-(II), (D)-(IV)
- (b) (A)-(II), (B)-(IV), (C)-(III), (D)-(I)
- (c) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (d) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

Ans.(c)

Sol. The correct matching is as follows:

1. **(A) Vertical – (III) Linear:**

o Vertical communication flows **upward or downward** in a linear hierarchy, such as communication between a manager and a subordinate.

2. **(B) Horizontal – (IV) Often informal:**

o Horizontal communication occurs between individuals or departments at the **same hierarchical level**, often informally for collaboration and coordination.

3. **(C) Diagonal – (I) Cross-functional:**

o Diagonal communication involves individuals **across different levels and departments**, making it cross-functional. It enhances collaboration between teams that do not have a direct hierarchical link.

4. **(D) External – (II) Used by specialists:**

o External communication occurs **outside the organization**, often carried out by specialists such as public relations officers or marketing teams.

Information Booster:

1. **Vertical Communication:**

- o It flows through formal hierarchical channels (upward or downward).
- o Example: Instructions from a manager to employees.

2. **Horizontal Communication:**

- o It occurs between peers or departments at the same level.
- o Often informal and improves coordination.

3. **Diagonal Communication:**

- o Crosses hierarchical and departmental boundaries.
- o Example: A team member communicating with a senior from another department.

4. **External Communication:**

- o Directed towards stakeholders outside the organization (customers, vendors, etc.).
- o Often handled by specialized teams.

Q9. In a certain coding scheme, 'MANGO' is written as 'KYLEM'. In the same scheme, how will 'GUAVA' be written?

- (a) ESCTC
- (b) FSYUY
- (c) ESCUC
- (d) ESYTY

Ans.(d)

Sol. Given:

'MANGO' → 'KYLEM'

To determine how 'GUAVA' is coded.

Let's analyze the transformation:

M A N G O

K Y L E M

Pattern Analysis:

1. Observe that the letters **move backward 2 places** in the alphabet.

o M → K

o A → Y

o N → L

o G → E

o O → M

Now, apply the same logic to **GUAVA**:

G U A V A

E S Y T Y

• **G → E** (2 places back)

• **U → S** (2 places back)

• **A → Y** (2 places back)

• **V → T** (2 places back)

• **A → Y** (2 places back)

Thus, **GUAVA** is coded as **ESYTY**.

Q10. Statement I: Total absence of fluoride in drinking water causes dental caries.

Statement II: With presence of fluoride in drinking water, all the dental problems can be avoided.

In the light of the above statements, choose the most appropriate answer from the options given below:

Given below are two statements:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Ans.(c)

Sol. Statement I is correct: Fluoride in drinking water plays a critical role in preventing dental caries (tooth decay). Fluoride strengthens the enamel by aiding the remineralization process and makes teeth more resistant to acid attacks from plaque bacteria. Studies have shown that areas with an optimal amount of fluoride in water have significantly lower rates of dental caries compared to areas with no fluoride.

Statement II is incorrect: While fluoride helps prevent dental caries, it does not address all dental problems. Other issues, such as periodontal disease (gum disease), enamel erosion due to acidic foods and beverages, and trauma-related dental problems, are unaffected by fluoride presence. Good oral hygiene practices and regular dental check-ups are essential for overall dental health.

Information Booster · Fluoride's Role in Dental Health: The recommended level of fluoride in drinking water is about 0.7 ppm. Excessive fluoride, however, can cause dental fluorosis, leading to discoloration or pitting of teeth.

Dental Caries: It is one of the most common chronic diseases worldwide, caused by demineralization of tooth enamel due to bacterial acids.

Limitations of Fluoride: It does not prevent problems related to improper brushing, gum infections, or other lifestyle factors like smoking and diet.

Causes of Dental Caries Without Fluoride: Lack of fluoride makes the enamel vulnerable to acid attacks. Over time, the damage can lead to cavities.

Excess Fluoride (Fluorosis): Excessive fluoride consumption can lead to mottling of teeth or skeletal fluorosis in severe cases.

Non-Fluoride Dental Care: Proper brushing, flossing, and dietary practices are equally critical in preventing overall dental health issues.

TOPICS ASKED IN HOME SCIENCE (8 JANUARY 2025 SHIFT- 2)

MODERATE LEVEL PAPPER

MANY QUESTIONS ON MATCH THE COLUMN

NO ASSERTION-REASON BASED QUESTIONS

- Parenting style
- Evaluation process
- Pica
- Nutraceutical
- Non parametric test
- Anova
- Type I and type II of error
- Rayon process
- Kasuti embroidery
- Textile testing
- Chemical spinning
- PRA
- Theories of Child and human development
- Personality traits
- Post India Extension
- Food corporation rules and punishments
- Sleeves
- Edger Dale model
- Innovation diffusion Model
- Vitamins and PEM deficiency
- Colour scheme
- Munsell colour
- RC easy