# UGC NET Home Science Memory Based Question -7 JAN 2026 SHIFT -2

**Q1.** " Arrange the stages of language development during infancy.
A. Intonation
B. Crying
C. Babbling
D. Echolalia
E. Cooing
Choose the correct answer from the options given below:
A. A, C, B, E, D
B. D, E, A, C, B
C. B, E, C, D, A
D. C, D, A, B, E
Answer:
C
Sol:
The correct sequence of language development stages during infancy is:
1. Crying (B): The earliest form of communication, which begins at birth. Infants use crying as a primary means of expressing needs.
2. Cooing (E): Around 6-8 weeks, infants start making soft vowel sounds, such as "oo" or "ah", which is an early sign of vocal experimentation.
3. Babbling (C): Between 4 to 6 months, infants begin producing consonant-vowel combinations, such as "ba-ba" or "da-da". This stage is crucial for the development of speech sounds.
4. Echolalia (D): By around 9-12 months, infants start to imitate sounds and words they hear, repeating them without fully understanding the meaning.
5. Intonation (A): Toward the end of the first year, infants begin to mimic the pitch and rhythm of the language they hear, which helps them form more complex speech patterns.
Information Booster:
Language development in infants follows a predictable pattern, starting from basic vocalizations like crying and progressing through various stages as they experiment with sound production. By the time they reach the intonation stage, infants are learning how to modulate their voice, preparing them for forming actual words and sentences.
- Crying: Serves as a reflex to indicate discomfort, hunger, or other needs.
- Cooing: Marks the beginning of vocal play, indicating pleasure and comfort.
- Babbling: Represents the first attempt at structured vocalization and sound experimentation.
- Echolalia: The repetitive imitation of sounds, a precursor to meaningful speech.
- Intonation: Infants start using varied pitch and rhythm in their vocalizations, closely mirroring the speech patterns they hear from adults.

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**Q2.** Arrange the following terms in the increasing order of complexity as per Bloom's Taxonomy of Objectives:
A. Creating B. Applying C. Understanding D. Evaluating E. Analyzing
Choose the correct answer from the options given below:
A. A, C, D, E, B
B. B, D, E, A, C
C. C, B, E, D, A
D. D, E, B, C, A
Answer:
C

Sol:
Bloom's Taxonomy of Educational Objectives classifies learning into six levels, arranged in increasing order of complexity. The correct sequence from simpler to more complex cognitive skills is:
1. Understanding (C):
• Basic comprehension of concepts.
• Example: Explaining a concept in one's own words.
2. Applying (B):
• Using knowledge in real-life situations.
• Example: Solving a math problem using a learned formula.
3. Analyzing (E):
• Breaking down information into components.
• Example: Identifying the relationship between different variables in an experiment.
4. Evaluating (D):
• Making judgments based on criteria.
• Example: Assessing the credibility of a news source.
5. Creating (A):
• Generating new ideas, designs, or solutions.
• Example: Writing an original essay or developing a business plan.
Since the increasing order of complexity is Understanding → Applying → Analyzing → Evaluating → Creating, the correct answer is (c) C, B, E, D, A.
Information Booster:
Bloom's Taxonomy (Revised):
1. Remembering – Recall facts and concepts.
2. Understanding – Explain ideas or concepts.
3. Applying – Use information in new situations.
4. Analyzing – Draw connections among ideas.
5. Evaluating – Justify a decision or stance.
6. Creating – Produce new work or ideas.
Why This Sequence Matters?
• Guides curriculum design for progressive learning.
• Helps in assessment planning by structuring questions from basic to advanced levels.
• Encourages higher-order thinking among students.

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**Q3.** Arrange the stages of the decision-making process in sequence:
(A) Identifying Alternatives (B) Defining the Problem (C) Evaluating Alternatives (D) Making the Decision (E) Implementing the Decision
Choose the correct answer from the options given below:
A. (B), (A), (C), (D), (E)
B. (A), (B), (D), (C), (E)
C. (B), (A), (D), (C), (E)
D. (C), (A), (B), (E), (D)
Answer:
A
Sol:
The correct sequence of stages in the decision-making process is:
1. Defining the Problem (B): The process begins by clearly identifying and defining the problem that requires a decision.
2. Identifying Alternatives (A): Possible courses of action or solutions to the problem are identified.

3. Evaluating Alternatives (C): The pros and cons of each alternative are weighed to determine the best option.
4. Making the Decision (D): A final decision is made based on the evaluation of alternatives.
5. Implementing the Decision (E): The chosen alternative is put into action, and the decision is implemented.
Information Booster:
The decision-making process is a structured approach to problem-solving that ensures the most effective solution is chosen and executed. It involves understanding the problem, considering various alternatives, evaluating them, making a decision, and implementing it successfully.
• Defining the Problem (B): Clearly identifying the issue that needs a resolution.
• Identifying Alternatives (A): Exploring different strategies or solutions that could potentially solve the problem.
• Evaluating Alternatives (C): Analyzing each option in terms of feasibility, risks, and benefits.
• Making the Decision (D): Selecting the best course of action based on the evaluation.
• Implementing the Decision (E): Putting the chosen solution into practice and ensuring it is carried out effectively.

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**Q4.** Arrange the following from the highest percentage to lowest percentage of memory retention as per Edgar Dale's Cone of Experience:
A. Design collaborative lessons B. Simulate C. Watch a demonstration D. Watch videos E. Read
Choose the correct answer from the options given below:
A. A, B, D, C, E
B. B, A, C, D, E
C. C, D, E, B, A
D. D, B, A, E, C
Answer:
B
Sol:
Edgar Dale's Cone of Experience describes how different learning methods impact memory retention. The general principle is:
• Active learning methods lead to higher retention (learning by doing).
• Passive learning methods lead to lower retention (learning by reading, listening, or watching).
From highest to lowest memory retention, the correct sequence is:
1. B. Simulate (90%) – Simulating real experiences or role-playing helps in maximum retention as learners actively engage in the learning process.
2. A. Design collaborative lessons (70-80%) – Collaborative learning, where students actively engage by discussing and problem-solving, improves retention significantly.
3. C. Watch a demonstration (50%) – Observing a live demonstration retains more information compared to just watching a video or reading, as it involves both visual and observational learning.
4. D. Watch videos (30%) – Watching educational videos is less effective than demonstrations or hands-on experiences because it is passive learning.
5. E. Read (10%) – Reading alone has the lowest retention rate, as it lacks interaction and engagement.
Information Booster:
Retention Rates in Edgar Dale's Cone of Experience:
1. Doing the real thing (90%) – Simulations, role-playing, real-world experiences.
2. Participating in discussions (70-80%) – Group learning, teaching others.
3. Watching a demonstration (50%) – Live demonstrations, experiments.
4. Watching videos (30%) – Recorded lectures, visual content.
5. Reading (10%) – Text-based learning, passive study.

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**Q5.** Match the following List I with List II:

| **Column A (Type of Synthetic Dye)** | **Column B (Characteristic)** |
|---|---|
| 1. Azo dye | A. Water-soluble dye, used for protein fibers like wool, silk, and nylon, provides bright colors |
| 2. Vat dye | B. Water-insoluble dye that requires reduction to become soluble and is used on cotton |
| 3. Acid dye | C. Water-soluble dye used primarily for protein fibers such as wool and silk, gives bright colors |
| 4. Basic dye | D. Contains azo group (-N=N-), commonly used for bright shades on cellulose fabrics |

Codes:
Match the column
A. 1-D, 2-B, 3-C, 4-A
B. 1-A, 2-B, 3-C, 4-D
C. 1-D, 2-C, 3-B, 4-A
D. 1-B, 2-D, 3-A, 4-C
Answer:
A
Sol:

- Azo dye (1) contains the azo group (-N=N-), which imparts bright, vivid colors mainly on cellulose fibers such as cotton. This makes option D the correct match.
- Vat dye (2) is initially water-insoluble and requires a chemical reduction to convert into a soluble form before dyeing. It is mainly applied on cotton fabrics, so it matches option B.
- Acid dye (3) is water-soluble and has a strong affinity for protein fibers like wool and silk, producing bright and vibrant colors. Hence, option C is correct.
- Basic dye (4) is a water-soluble cationic dye that is used for protein fibers and some synthetic fibers such as acrylic, known for bright shades, matching option A.

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Information Booster:
Azo dyes are the most commonly used synthetic dyes, especially on cellulose fibers, due to their bright and stable colors derived from the azo (-N=N-) group. Vat dyes, despite being insoluble in water, can be chemically reduced to a soluble form for dyeing cotton, then oxidized back to an insoluble form inside the fiber, ensuring excellent fastness properties. Acid dyes bond well with protein fibers through ionic interactions, producing brilliant shades on wool and silk. Basic dyes, also water-soluble, are cationic and excel in coloring protein and some synthetic fibers with vivid brightness but may have less lightfastness compared to vat or azo dyes.

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**Q6.** Match List - I with List - II Match the following signs and symptoms with the deficiency of nutrients correctly.

| List – I Sign and Symptoms | List – II Nutrient deficiency | | |
|---|---|---|---|
| A. | Cretinism | I. | Vitamin A |
| B. | Bitot's spot | II. | Iron |
| C. | Hyper pigmentation of the parts of the body which are exposed to the environment | III. | lodine |
| D. | Spoon shaped nails | IV. | Niacin |

Choose the correct answer from the options given below:
Match the column

A. A - II, B - III, C - I, D - IV
B. A - IV, B - II, C - I, D - III
C. A - III, B - I, C - IV, D - II
D. A - I, B - IV, C - II, D – III
Answer:
C
Sol:
The correct matches for the signs and symptoms with nutrient deficiencies are:
• Cretinism (A) - Iodine (III): Cretinism is a condition caused by severe iodine deficiency during pregnancy, leading to stunted physical and mental growth in the infant.
• Bitot's spot (B) - Vitamin A (I): Bitot's spots are foamy white accumulations on the conjunctiva of the eye, indicating vitamin A deficiency.
• Hyperpigmentation (C) - Niacin (IV): Hyperpigmentation in sun-exposed areas is a sign of niacin deficiency, leading to a condition known as pellagra.
• Spoon-shaped nails (D) - Iron (II): Also known as koilonychia, spoon-shaped nails are a common symptom of iron deficiency anemia.
Information Booster: Understanding the symptoms of nutrient deficiencies is crucial for diagnosing and addressing health issues related to diet. Nutrient deficiencies can lead to various conditions, each associated with specific signs and symptoms:
• Iodine Deficiency: Leads to goiter and cretinism, impacting thyroid function and development.
• Vitamin A Deficiency: Causes night blindness, xerophthalmia, and Bitot's spots, affecting vision.
• Niacin Deficiency: Results in pellagra, characterized by dermatitis, diarrhea, and dementia.
• Iron Deficiency: Leads to anemia, causing fatigue, pallor, and koilonychia.
Additional Knowledge:
• Nutritional Interventions: Addressing nutrient deficiencies often involves dietary changes, supplementation, and public health measures such as fortification of foods.
• Symptoms and Diagnosis: Regular monitoring of signs and symptoms is vital for early diagnosis and treatment of nutrient deficiencies.

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**Q7.** Sequence of wool processing:
1. Scouring
2. Carbonizing
3. Dyeing
4. Crabbing
5. Decatising
6. Milling
Options:
A. 1, 2, 6, 4, 5, 3
B. 1, 2, 3, 6, 4, 5
C. 2, 1, 3, 6, 5, 4
D. 1, 3, 2, 4, 5, 6
Answer:
B
Sol:
Wool processing follows a scientific and logical order moving from cleaning → removing impurities → colouring → fabric formation → setting → final finishing. Each step prepares the fibre for the next stage.
Scouring (1) · This is always the first step in wool processing.
• Raw wool contains dirt, grease (lanolin), perspiration salts, and vegetable matter.
• Scouring removes these impurities using hot water and detergents.

• Clean fibres are essential for further processing.
Carbonizing (2) · After scouring, small particles like burrs, twigs, seeds still remain.
• Carbonizing uses dilute sulphuric acid to dissolve these vegetable impurities.
• Makes wool more uniform and suitable for dyeing.
Dyeing (3) · Clean and impurity-free wool absorbs dyes evenly.
• Dyeing may be done at fibre stage, yarn stage, or fabric stage, but generally after carbonizing.
• Ensures good colour fastness and uniform shade.
Milling (6) · Milling (or fulling) is a felting process that thickens wool fabric.
• Wool fibres interlock under heat, moisture, and friction.
• Gives woollens their characteristic body, warmth, and firmness.
Crabbing (4) · A setting process done after milling.
• Fabric is passed through hot and cold water to stabilize dimensions.
• Prevents future shrinkage and distortion, improving durability.
Decatising (5) · A final finishing step.
• Gives wool fabric a smooth, lustrous, wrinkle-free appearance.
• Often done with steam under controlled pressure.
Information Booster · Scouring → Carbonizing → Dyeing ensures clean, impurity-free, properly coloured wool.
• Milling → Crabbing → Decatising are finishing operations that improve texture, stability, and appearance.
• This sequence is standard everywhere, from textile mills to industrial wool processing units.

**Q8.** Types of sleeves included under the "Set-in Sleeve" category:
(A) Puff Sleeve (B) Kimono Sleeve (C) Bell Sleeve (D) Raglan Sleeve (E) Bishop Sleeve
Choose the correct answer from the options given below:
A. (A), (C), and (E) Only
B. (B), (D), and (E) Only
C. (A), (C), and (D) Only
D. (D), (B), and (A) Only
Answer:
A
Sol:
The correct answer includes Puff Sleeve (A), Bell Sleeve (C), and Bishop Sleeve (E). These types of sleeves fall under the set-in sleeve category, meaning the sleeves are sewn into an armhole that is set in around the shoulder. A puff sleeve is gathered at the shoulder and sometimes at the cuff. A bell sleeve flares out toward the wrist, giving it a wide, bell-like shape. The bishop sleeve is fuller at the bottom and gathered at the wrist, giving it a soft, flowing effect.
Information Booster:
• Puff Sleeve (A): A puff sleeve is gathered at the shoulder to give it a voluminous, puffy appearance. It's often used in more formal or vintage styles.
• Bell Sleeve (C): A bell sleeve is fitted at the shoulder and upper arm but flares out toward the wrist, resembling the shape of a bell.
• Bishop Sleeve (E): A bishop sleeve is wide and flowing, gathered into a cuff at the wrist, creating a soft and romantic look.
Additional Knowledge:
• Kimono Sleeve (B): A kimono sleeve is part of the bodice, cut in one piece with the garment, rather than being set into an armhole.
• Raglan Sleeve (D): A raglan sleeve extends from the collar down to the underarm, giving it a more relaxed fit.

**Q9.** Which of the following is a convertible collar?
A. Sailors
B. Peter pan
C. Bush shirt
D. Cape
Answer:
C
Sol:
The correct option is (c) Bush shirt: A convertible collar is a type of collar that can be worn either folded over like a standard collar or unfolded and buttoned up to protect the neck. The collar of a bush shirt is designed to be convertible, allowing the wearer to adjust it based on weather conditions or personal preference.

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**Q10.** Sequence of stages in the Divorce process (according to Bohannan):
1. Legal divorce
2. Emotional divorce
3. Social divorce
4. Economic divorce
5. Co-parental divorce
Options:
A. 2 1 4 5 3
B. 2 4 1 5 3
C. 1 2 3 4 5
D. 2 5 4 1 3
Answer:
A
Sol:
According to Bohannan's stages of divorce, the process follows this sequence:
Emotional divorce: This is the first phase where the emotional disconnect between the partners begins. The emotional bond starts to break down, even before the legal or physical separation occurs.
Legal divorce: The formal legal process begins, where the marriage is legally dissolved, and the couple starts the process of separation through legal channels (e.g., filing for divorce, dividing assets).
Economic divorce: In this stage, the couple separates their financial responsibilities and assets, leading to the economic independence of both individuals.
Co-parental divorce: If children are involved, this stage involves the couple transitioning to a co-parenting relationship, focusing on raising their children together while living separately.
Social divorce: This is the final stage, where the couple stops interacting socially as a married pair. Their social connections and interactions are redefined, and they no longer function as a couple in the community.
Information Booster · The ABCDEF model of divorce includes stages like emotional separation, legal processes, and economic and social transitions.
• The first phase, Emotional divorce, involves feelings of disconnection, followed by the legal and economic separation. Co-parenting is important if children are involved, and finally, social divorce marks the complete social and community disconnection.

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**Q11.** Which of the following defects is not found in knitted garments?
A. Barre
B. Reed mark
C. Uneven colour

D. Ladder
Answer:
B
Sol:
A reed mark is a defect that typically occurs in woven fabrics, not knitted garments. It is a horizontal line or stripe that appears in the fabric due to the reed in the loom, which is used to push the yarn into place during the weaving process. When the reed is damaged or uneven, it causes this mark to appear as the fabric is woven.
In contrast, knitted garments typically experience defects that arise from the unique structure of the knitting process. Knitting involves interlocking loops of yarn, which makes the fabric more flexible and prone to different types of defects than woven fabrics.
Information Booster
Reed mark is specific to woven fabrics. It occurs due to uneven reed pressure during weaving, which causes visible lines or stripes. The reed is the part of the loom that pushes the threads into place as they are woven, and if the reed is not aligned properly or has inconsistent pressure, it leaves marks on the fabric.
Additional Knowledge
• Barre: As mentioned, this defect arises in knitted fabrics due to irregular yarn tension, leading to the creation of striped patterns or lines in the fabric that are not present in the design.
• Uneven colour: This is a common problem in both knitted and woven fabrics due to inconsistent dyeing, but it is particularly visible in knitted fabrics due to their looped construction.
• Ladder: Laddering is a typical defect in knitted fabrics, often caused by snags or broken yarns. Unlike woven fabrics, where defects are more about the weaving process itself, knitted garments are more likely to show laddering due to the loops in the fabric structure.

**Q12.** Match List I with List II

| List-I (Traditional Indian Textile) | List-II (Technique of Production) |
|---|---|
| A. Patola | I. Woven |
| B. Kantha | II. Embroidered |
| C. Brocade | III. Painted |
| D. Kalamkari | IV. Tie-dyed |

Codes
Match the column
A. A-I, B-II, C-IV, D-III
B. A-IV, B-II, C-I, D-III
C. A-II, B-I, C-III, D-IV
D. A-III, B-IV, C-II, D-I
Answer:
B
Sol:
The correct answer is A-IV, B-II, C-I, D-III.

• A. Patola: IV. Tie-dyed. Patola textiles from Gujarat are famous for their intricate double ikat technique, where both the warp and the weft threads are tie-dyed before weaving, resulting in vibrant and complex patterns.
• B. Kantha: II. Embroidered. Kantha is a traditional embroidered textile from Bengal, made by stitching layers of fabric together with running stitches to create artistic patterns, often depicting nature or daily life.
• C. Brocade: I. Woven. Brocade is a richly woven fabric, often incorporating gold or silver threads to create intricate patterns. It is primarily a woven textile and is widely used in making luxurious garments, particularly in Varanasi.
• D. Kalamkari: III. Painted. Kalamkari is a traditional form of hand-painted fabric, originating from Andhra Pradesh and Telangana. The designs are created using natural dyes, often depicting religious or mythological themes.
Information Booster:
• Patola uses tie-dye in the ikat technique, which is a form of dyeing where threads are tied in specific places before being dyed, creating intricate patterns when woven.
• Kantha is a form of embroidery in which layers of fabric are stitched together with simple running stitches, creating beautiful, often story-based patterns.
• Brocade is a luxurious woven fabric that uses gold or silver threads to create raised designs and is often associated with formal or ceremonial wear.
• Kalamkari is known for its painting technique, where fabrics are painted by hand with designs using natural dyes, often portraying Hindu deities or mythological scenes.

**Q13.** Match the following List I with List II:

| **LIST I** | **LIST II** |
|---|---|
| A. Niacin deficiency | i) Beriberi |
| B. Iron deficiency | ii) Koilonychia |
| C. Iodine deficiency | iii) Pellagra |
| D. Thiamin deficiency | iv) Goitre |

Codes
A. A– IV, B- I, C- II, D- III
B. A– III, B- II, C-IV, D- I
C. A– II, B- III, C- I, D- IV
D. A– I, B- IV, C- III, D- II
Answer:
B
Sol:
The correct option is (b). Niacin (nicotinic acid) deficiency: Niacin (nicotinic acid) deficiency classically results in pellagra which is a chronic wasting disease associated with a characteristic erythematous dermatitis that is bilateral and symmetrical, a dementia after mental changes including insomnia and apathy preceding an overt encephalopathy, and diarrhoea resulting from inflammation of the intestinal mucous surfaces. The disease is, therefore, characterized by 3 D's- dirrhoea, dermatitis and dementia. Pellagra-like syndromes occurring in the absence of a dietary niacin deficiency are also attributable to disturbances in tryptophan metabolism.

FIG – Pellagra

Iron deficiency: Iron deficiency is the most frequent cause of koilonychia. Koilonychia is a deformity of the nails where the central portion of the nail is depressed and the lateral aspects of the nail are elevated.

FIG - Koilonychia

Iodine deficiency: Goitre, i.e., a larger thyroid gland than normal. The mildest form of goitre ranges from those only detectable by touch (palpation) to very large goitre that can cause breathing problems. The enlargement of glands occurs from stimulation of thyroid cells by TSH and without ability to increase hormones production owing to iodine deficiency

FIG – Goitre

Thaimin deficiency: 1) Wet beriberi: Oedema is the important feature of wet beriberi. It may develop rapidly and involve not only the legs but also the face, trunk and serous cavities.
Palpitation and breathlessness are present. The calf muscles are frequently tense, slightly swollen and tender on pressure. The veins of the neck are distended and show visible pulsations. The diastolic blood pressure is low and systolic is high. The pulse is fast and bouncing. The heart becomes weak and death occurs due to heart failure.
2) Dy beriberi: Early symptoms are similar to those found in wet beriberi. The muscles become progressively wasted and weak and walking becomes difficult. The emaciated subject needs the help of sticks to stand and walk and finally becomes bed-ridden. If not treated, the patients will die. Beriberi occurs in human-milk-fed infants whose nursing mothers are deficient. Let us get to know about the infantile beriberi.
3) Infantile beriberi: Infantile beriberi is commonly seen in many South-East Asian countries where the diets consist mostly of "polished rice" and are deficient in thiamin. The occurrence of beriberi is due to: a) inadequate thiamin intake, related mainly to poor thiamin content of breast milk, and b) consumption of over-milled rice, deficient in thiamin by the mother.

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**Q14.** With respect to RDA (ICMR - NIN, 2020) of Iron, which of the following are correct?
A. 8 mg/d for 1-3 yr old children
B. 11 mg/d for 4-6 yr old children
C. 15 mg/d for 7-9 yr old children
D. 19 mg/d for 10-12 yr old boys
E. 29 mg/d for 10-12 yr old girls
Choose the correct answer from the options given below:
A. A, B, C only
B. B, C, D only
C. C, D, E only
D. B, D, E only
Answer:
A
Sol:

| Age Group | RDA for Iron (mg/day) |
|---|---|
| 1–3 years | 8 mg/day ✅ → A is correct |
| 4–6 years | 11 mg/day ✅ → B is correct |
| 7–9 years | 15 mg/day ✅ → C is correct |
| 10–12 years (boys) | 16 mg/day ❌ → D is incorrect |
| 10–12 years (girls) | 28 mg/day ❌ → E is incorrect |

Information Booster:
• These RDAs are designed to meet the needs of 98% of healthy individuals in the population.
• Children's iron requirements increase with age due to growth, tissue expansion, and in girls, onset of menstruation.

• Absorption efficiency (bioavailability) is factored in, typically assumed at 5% for diets primarily based on plant sources.

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**Q15.** Arrange the following phases of the menstrual cycle in the correct physiological sequence:
(A) Menstrual phase
(B) Follicular phase
(C) Ovulation
(D) Luteal phase
A. (A), (B), (C), (D)
B. (B), (A), (C), (D)
C. (A), (B), (D), (C)
D. (B), (C), (A), (D)
Answer:
A
Sol:
The correct sequence of the four phases of the menstrual cycle is:
1. Menstrual phase (A): This is the start of the cycle, where the endometrial lining is shed because pregnancy hasn't occurred. It lasts around 3–7 days.
2. Follicular phase (B): This phase starts after menstruation. It involves the growth and maturation of ovarian follicles, driven by Follicle-Stimulating Hormone (FSH), and the thickening of the uterine lining. Estrogen levels rise during this phase.
3. Ovulation (C): Mid-cycle, typically around day 14 of a 28-day cycle, a surge in Luteinizing Hormone (LH) triggers the release of a mature egg from the ovary.
4. Luteal phase (D): After ovulation, the ruptured follicle transforms into the corpus luteum, which secretes progesterone. This hormone prepares the endometrium for possible implantation. If no pregnancy occurs, the corpus luteum degenerates, leading to a drop in progesterone and the start of menstruation.
Information Booster
The menstrual cycle consists of four key phases that regulate the process of ovulation and menstruation:
• Menstrual phase (A) marks the beginning of the cycle with the shedding of the uterine lining. This is often considered Day 1 of the menstrual cycle.
• Follicular phase (B) overlaps with the menstrual phase. During this time, follicles in the ovaries begin to mature, and estrogen levels rise to rebuild the endometrium.
• Ovulation (C) occurs when a mature follicle bursts, releasing an egg into the fallopian tube. This is the phase when a woman is most fertile.
• Luteal phase (D) follows ovulation, where the empty follicle turns into the corpus luteum, producing progesterone to support potential pregnancy. If fertilization doesn't occur, the luteal phase ends and menstruation begins.

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**Q16.** Which type of seam is commonly used for joining two pieces of fabric with the raw edges enclosed within the seam, providing a clean finish and reducing fraying?
A. Overlocked Seam
B. Plain Seam
C. French Seam
D. Flat-Felled Seam
Answer:
C
Sol:
French Seam is a type of seam where the raw edges of the fabric are enclosed within the seam, providing a clean and finished look. This technique involves sewing the fabric pieces together with wrong sides facing,

trimming the seam allowance, and then sewing again with right sides together to fully encase the raw edges. This results in a neat, durable seam suitable for lightweight fabrics.
Information booster: Overlocked Seam (or serged seam) uses a serger to finish the edges and join the fabric, preventing fraying.
Plain Seam is a basic seam where the fabric edges are simply stitched together and not finished, which can lead to fraying.
Flat-Felled Seam is a strong, finished seam where one seam allowance is folded over the other and stitched down, commonly used in jeans and workwear.

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**Q17.** Arrange the steps involved in the research process:
(A) Literature Review and Problem Identification
(B) Data Collection
(C) Formulation of Research Hypothesis
(D) Data Analysis and Interpretation
(E) Report Writing and Presentation
(F) Research Design and Methodology
(G) Defining Research Objectives
Choose the correct answer from the options given below:
A. (A), (G), (C), (F), (B), (D), (E)
B. (G), (A), (C), (F), (B), (E), (D)
C. (A), (G), (F), (C), (B), (D), (E)
D. (G), (C), (A), (F), (B), (D), (E)
Answer:
A
Sol:
1. Literature Review and Problem Identification (A): The research process begins with a comprehensive review of existing literature to identify gaps or issues needing investigation.
2. Defining Research Objectives (G): Clear and precise objectives are formulated to guide the scope and focus of the study.
3. Formulation of Research Hypothesis (C): Based on objectives and literature, hypotheses or research questions are developed to be tested or explored.
4. Research Design and Methodology (F): This step involves planning the study design, selecting methods for data collection and analysis.
5. Data Collection (B): Gathering relevant information through surveys, experiments, observations, or secondary data sources.
6. Data Analysis and Interpretation (D): Analyzing the collected data using statistical or qualitative methods to derive meaningful conclusions.
7. Report Writing and Presentation (E): Preparing the research report, presenting findings, and making recommendations based on results.
Information Booster
A systematic approach to research ensures validity, reliability, and replicability of findings. Each step builds on the previous one, maintaining coherence throughout the study.
• Sometimes, the formulation of hypothesis can be exploratory or happen after initial data collection in qualitative research.
• Research design may be qualitative, quantitative, or mixed methods depending on the nature of the problem.
• Ethical considerations are embedded throughout the research process, especially during data collection.

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**Q18.** Which of the following statements is true regarding ergonomics?
I. Ergonomics only focuses on physical aspects of work environments.
II. Ergonomics aims to optimize both physical and cognitive aspects of human performance.
III. Ergonomics is primarily concerned with aesthetics in product design.
IV. Ergonomics is unrelated to workplace safety.
A. I, III, IV
B. II, III, IV
C. III only
D. II only
Answer:
D
Sol:
The correct option is (d) Ergonomics is concerned with optimizing both physical aspects (such as posture and movement) and cognitive aspects (such as mental workload and decision-making) to improve overall human performance. It involves designing work environments, products, and systems that consider human capabilities and limitations, as well as cognitive processes such as decision-making, memory, and attention, to enhance overall performance and reduce the risk of injury or strain.
Information booster: Ergonomics only focuses on physical aspects of work environments: This statement is incorrect because ergonomics considers not only physical factors like posture and workstation design but also cognitive and organizational aspects. It encompasses the study of how humans interact with their work environment in terms of physical, cognitive, and organizational factors to optimize performance and well-being.
Ergonomics is primarily concerned with aesthetics in product design: This statement is incorrect. While aesthetics can be a component of product design, ergonomics primarily focuses on designing products, environments, and systems that prioritize functionality, comfort, and usability to better fit the needs and capabilities of users. Aesthetics may complement ergonomic design, but they are not the primary concern.
Ergonomics is unrelated to workplace safety: This statement is incorrect. Ergonomics plays a crucial role in workplace safety by designing work environments and processes that minimize the risk of injury and promote employee well-being. Ergonomic principles help identify and mitigate hazards, such as repetitive strain injuries, musculoskeletal disorders, and slips, trips, and falls, thereby enhancing overall workplace safety.

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**Q19.** Which one of the following is a natural protein fibre?
A. Vicuna
B. Sisal
C. Aramid
D. Anidex
Answer:
A
Sol:
The correct option is (a) Vicuna: Vicuna is a natural protein fiber obtained from the fleece of the vicuna, a South American camelid closely related to the alpaca and llama. It is prized for its softness, fineness, and luxurious feel, making it highly desirable for textiles, particularly in the production of high-quality garments and fabrics.
Information booster:
Sisal (b): Sisal is a natural fiber derived from the leaves of the Agave sisalana plant. It is primarily composed of cellulose and is used to make ropes, twines, and various other products due to its strength and durability. However, sisal is a plant fiber, not a protein fiber.

Aramid (c): Aramid fibers, such as Kevlar and Nomex, are synthetic fibers known for their exceptional strength and heat resistance. They are commonly used in applications requiring high tensile strength and flame resistance, such as bulletproof vests, aerospace materials, and protective clothing.
Anidex (d): Anidex is one of the elastomeric synthetic fibers.

**Q20.** Etawah Pilot Project in Uttar Pradesh was started under the leadership of:
A. Lord Curzon
B. Albert Mayer
C. F.L. Brayne
D. Dr. M.S. Swaminathan
Answer:
B
Sol:
The Etawah Pilot Project was launched in 1948 in Etawah district, Uttar Pradesh, under the leadership of Albert Mayer, an American architect and planner. It is regarded as the first rural development experiment in independent India and served as a model for the later Community Development Programme (CDP) introduced in 1952.
Albert Mayer's approach emphasized people's participation, integrated rural development, and improvement of living standards through community effort. The project was implemented in collaboration with Horace Holmes (a U.S. sociologist) and Pandit Govind Ballabh Pant, the then Chief Minister of Uttar Pradesh.
Information Booster
• Initiated: 1948, Etawah District, Uttar Pradesh.
• Leader: *Albert Mayer* (American planner).
• Supported by: *Pandit Govind Ballabh Pant* (U.P. Chief Minister).
• Key Features:
• Integrated approach to agriculture, health, education, and sanitation.
• Emphasis on self-help and local participation.
• Used extension education principles for rural upliftment.
• Outcome: Became the blueprint for India's Community Development Programme (1952).
• Philosophy: "People's development through their own efforts."
Additional Knowledge
• (a) Lord Curzon – British Viceroy (1899–1905), known for administrative reforms, not rural development work.
• (c) F.L. Brayne – Initiated the Gurgaon Project (Haryana), another early rural development experiment (1920s).
• (d) Dr. M.S. Swaminathan – Leader of India's Green Revolution (1960s–70s), not related to the Etawah Project.