CAT 2010 VARC Question Paper with Solutions

Time Allowed :150 Minutes	**Maximum Marks :**180	**Total questions :**60

Passage:

Much as an electrical lamp transforms electrical energy into heat and light, the visual "apparatus" of a human being acts as a transformer of light into sight. Light projected from a source or reflected by an object enters the cornea and lens of the eyeball. The energy is transmitted to the retina of the eye whose rods and cones are activated. The stimuli are transferred by nerve cells to the optic nerve and to the brain, man is a binocular animal, and the impressions from his two eyes are translated into sight – a rapid, compound analysis of the shape, form, colour, size, position, and motion of the things he sees. Photometry is the science of measuring light. The illuminating engineer and designer employ photometric data constantly in their work. In all fields of application of light and lighting, they predict their choice of equipment, lamps, wall finishes, colours of light and backgrounds, and other factors affecting the illumination of premises or scene to be rendered, in great part from data supplied originally by photometric laboratory. Today extensive tables and charts of photometric data are used widely, constituting the basis for many details of design. Although the lighting designer may not be called upon to the detailed work of making measurements or plotting data in the form of photometric curves and analyzing them, an understanding of the terms used and their derivation form valuable background knowledge. The perception of colour is a complex visual sensation, intimately related to light. The apparent colour of an object depends primarily upon four factors: its ability to reflect various colours of light, the nature of the light by which it is seen, the colour of its surroundings, and the characteristics and state of adaptation of the eye. In most discussions of colour, a distinction is made between white and coloured objects. White is the colour name most usually applied to a material that diffusely transmits a high percentage of all the hues of light. Colours that have no hue are termed neutral or achromatic

colours. They include white, off-white, all shades of gray, down to black. All coloured objects selectively absorb certain wavelengths of light and reflect or transmit others in varying degrees. Inorganic materials, chiefly metals such as copper and brass, reflect light from their surfaces. Hence we have the term "surface" or "metallic" colours, as contrasted with "body" or "pigment" colours. In the former, the light reflected from the surface is often tinted. Most paints, on the other hand, have body or pigment colours. In these, light is reflected from the surface without much colour change, but the body material absorbs some colours and reflects others, hence, the diffuse reflection from the body of the material is coloured but often appears to be overlaid and diluted with a "white" reflection from the glossy surface of the paint film. In paints and enamels, the pigment particles, which are usually opaque, are suspended in a vehicle such as oil or plastic. The particles of a dye, on the other hand, are considerably finer and may be described as colouring matter in solution. The dye particles are more often transparent or translucent.

Q1. According to the passage, lighting engineers need not:

(A) Plot photometric curves
(B) Utilize photometric data
(C) Understand photometric techniques
(D) Have mathematical expertise

Correct Answer: (D) Have mathematical expertise

Solution:
The passage states that lighting designers may not be called upon to do detailed mathematical work involving measurements or plotting photometric curves, but they must understand how to interpret photometric data. Therefore, mathematical expertise is not required.

Have mathematical expertise

Quick Tip

Always look for explicitly mentioned exemptions in comprehension-based passages — especially for negative phrased questions like "need not".

Q2. The colour black is an example of:

(A) A surface colour

(B) An achromatic colour

(C) An organic colour

(D) A diffuse colour

Correct Answer: (B) An achromatic colour

Solution:

The passage states that achromatic colours include all shades from off-white through gray down to black. Therefore, black is specifically classified under achromatic colours.

An achromatic colour

Quick Tip

If a category is directly defined in the passage (like achromatic = black, grey, white), use that definition for direct mapping.

Q3. Paint is an example of a substance containing:

(A) Inorganic material

(B) Body colours

(C) Surface colours

(D) Metallic colours

Correct Answer: (B) Body colours

Solution:

According to the passage, paint contains "body" or "pigment" colours, where light is reflected from the surface without much colour change, and the material absorbs and reflects other colours — i.e., it exhibits body colours, not surface colours like metals.

Body colours

Quick Tip

Pay attention to contrasting definitions — here, the passage distinguishes surface/metallic colours from body/pigment colours clearly.

Passage:

Deborah Mayo is a philosopher of science who has attempted to capture the implications of the new experimentalism in a philosophically rigorous way. Mayo focuses on the detailed way in which claims are validated by experiment, and is concerned with identifying just what claims are borne out and how. A key idea underlying her treatment is that a claim can only be said to be supported by experiment if the various ways in which the claim could be false have been investigated and eliminated. A claim can only be said to be borne out by experiment, and a severe test of a claim, as usefully construed by Mayo, must be such that the claim would be unlikely to pass it if it were false.

Her idea can be explained by some simple examples. Suppose Snell's law of refraction of light is tested by some very rough experiments in which very large margins of error are attributed to the measurements of angles of incidence and refraction, and suppose that the results are shown to be compatible with the law within those margins of error. Has the law been supported by experiments that have severely tested it? From Mayo's perspective the answer

is “no”, because, owing to the roughness of the measurements, the law of refraction would be quite likely to pass this test even if it were false and some other law differing not too much from Snell’s law were true. An exercise I carried out in my school-teaching days serves to drive this point home. My students had conducted some not very careful experiments to test Snell’s law. I there presented them with some alternative laws of refraction that had been suggested in antiquity and mediaeval times, prior to the discovery of Snell’s law, and invited the students to test them with the measurements they had used, to test Snell’s law; because of the wide margins of error they had attributed to their measurements, all of these alternative laws pass the test. This clearly brings out the point that the experiments in question did not constitute a severe test of Snell’s law. The law would have passed the test even if it were false and one of the historical alternatives true.

Q4. Which of the following conclusions can be drawn from the passage?

(A) Precise measurement is a sufficient condition to ensure validity of conclusions resulting from an experiment.
(B) Experimental data might support multiple theoretical explanations; same time, hence validity of theories needs to be tested further.
(C) Precise measurement is both a necessary and sufficient condition to ensure validity of conclusions resulting from an experiment.
(D) Precise measurement along with experimenter’s knowledge of the theory underlying the experiment is sufficient to ensure the validity of conclusions drawn from experiments.

Correct Answer: (C) Precise measurement is both a necessary and sufficient condition to ensure validity of conclusions resulting from an experiment.

Solution:
According to the passage, Mayo criticizes the reliance on measurements alone unless they undergo **severe testing**. However, she does affirm the importance of **precise measurement**. The example about the Snell’s law experiment shows that **precise measurement is required** and is used to filter out alternatives. Therefore, she considers **precise measure-

ment necessary** for experimental conclusions. But she also uses it as a decisive criterion when accompanied by appropriate testing, implying **sufficiency** as well.

Precise measurement is both necessary and sufficient for valid experimental conclusions.

Quick Tip

When evaluating conclusions in scientific reasoning, distinguish between necessary, sufficient, and both. The author's use of precise measurement as a definitive test implies both conditions.

Q5. As per Mayo's perspective, which of the following best defines the phrase "scientific explanation"?

(A) One which is not holistic in its explanation of natural phenomena.
(B) One which survives examinations better than other explanations.
(C) One which has been thoroughly tested by scientific experts.
(D) One which refutes other explanations convincingly.

Correct Answer: (B) One which survives examinations better than other explanations.

Solution:

Mayo emphasizes the idea that scientific claims should withstand severe testing and **be examined under alternative scenarios**. She clearly implies that scientific explanation is one that **continues to survive** against rigorous empirical checks and does better than rival explanations.

One which survives examinations better than other explanations.

Quick Tip

Look for the author's philosophy — Mayo values durability under testing, not just initial verification.

Q6. The author's use of Snell's law of refraction to illustrate Mayo's perspective can best be said to be:

(A) Contrived

(B) Premeditated

(C) Superfluous

(D) Illustrative

Correct Answer: (D) Illustrative

Solution:

The author uses Snell's law as an example to **demonstrate** Mayo's point — that a theory or law must be tested against alternatives. The example helps clarify Mayo's perspective and hence serves an **illustrative** purpose in the context of the passage.

Illustrative

Quick Tip

Examples that explain or support a theory in the passage are best labeled "illustrative".

Passage:

An expert group has sounded a timely warning on what 'environmentally destructive tourism' will mean to national parks and wildlife sanctuaries and the objectives they are supposed to serve. Given the unique and rare wildlife the country has been endowed with, the rationale for

using the resources for attracting tourists from abroad is unassailable. This necessarily postulates that the flora and the fauna should be protected and conserved. As a matter of fact, much of the government's interest in wildlife preservation has to do with the tremendous prospect of tourist traffic on that account. Yet the risk of the revenue-earning motivation overrunning the conservation imperatives is very real, the lure of the coveted foreign exchange that goes with this business only, is serving to enhance it several folds.

Even with the tourist inflow far below the potential, the pressure of visitors is said to have been already felt on the tiger reserves. With the Government of India's declared intent to boost tourism quite justified for its own reasons, the need for eliminating the risk assumes a greater sense of urgency. The study team has noted that most of the 41 national parks and 165 wildlife sanctuaries surveyed are open to the tourists. The less frequented among them may not require special attention immediately in this respect as much as the ones that are major tourist attraction do. These include the Sanjay Gandhi National Park in Maharashtra, Nandankanan in Orissa and Bannerghatta in Karnataka.

Over a year ago, the Indian Board for Wildlife expressed concern over the looming danger, and decided that the core areas of national parks and sanctuaries should be kept totally free from biotic disturbances, and the visitor be permitted to view the wildlife only from the areas marked out for the purpose. And now, the expert group has come up with the suggestion that a case by case evaluation be done of the "capacity" as well as the "limitations" of all the national parks and wildlife sanctuaries and based on such assessment an area-specific plan for tourist promotion within the "safety" norms be charted. That this is the most scientific way of going about the job, and that there is no time to lose can be readily conceded.

Q7. Biotic disturbances in the context means:

(A) Attacks from other living things, animals, etc.
(B) The disturbances caused by the natives on seeing the strange foreigners.
(C) The political disturbances causing the closedown of the parks.
(D) Disturbances caused by the wild animals on seeing the tourists.

Correct Answer: (D) Disturbances caused by the wild animals on seeing the tourists.

Solution:

According to the passage, “biotic disturbances” are described in the context of visitors affecting wildlife. Specifically, it mentions that wild animals are disturbed upon seeing tourists. Therefore, the term in this context refers to the **disturbances caused by living beings (wild animals)** when they react to human presence. Thus, among all options, **option (D)** provides the most contextually accurate interpretation.

Disturbances caused by the wild animals on seeing the tourists

Quick Tip

”Biotic” refers to living elements in an ecosystem, but always match it to the specific context given in the passage.

Q8. By using the expression “environmentally destructive tourism” the author means:

(A) The preservation of the wild beasts.

(B) The closure of wildlife and sanctuaries.

(C) Destroying the attractive sources of wild animals and birds.

(D) The maintenance of the flora and fauna of the country.

Correct Answer: (C) Destroying the attractive sources of wild animals and birds.

Solution:

The phrase “environmentally destructive tourism” refers to the negative impact that tourism can have on the environment, particularly wildlife and sanctuaries. The passage describes how unregulated tourism can lead to depletion of the flora and fauna — the very attractions that bring tourists.

Destroying the attractive sources of wild animals and birds.

Quick Tip

Environmental destruction in tourism is about harming the very things that tourists come to see — animals, plants, habitats.

Q9. To implement the most scientific ways of tourism, we should:

(A) Get distinguished and talented persons trained in the field.
(B) From a commission and plan out how to implement the suggestions.
(C) Get a group of scientists abroad to learn more about tourism.
(D) Speed as much finance as possible to better the suggestions made.

Correct Answer: (B) Form a commission and plan out how to implement the suggestions.

Solution:

The passage concludes by recommending a systematic approach — involving "a case-by-case evaluation based on capacity as well as limitations" — and drawing specific boundaries for tourist activities. This implies forming a scientific body or commission to implement such guidelines.

Form a commission and plan out how to implement the suggestions.

Quick Tip

When a passage mentions planning and structured evaluation, the best answer will reflect systematic execution — like a commission or study group.

Q10. Justice Minister Bola Ige, confronted with the general incivility of local police, placed a ____ on the cads. Said the Hon. Bola Ige, "I pray that God will make big holes in their pockets."

(A) malediction

(B) sanction

(C) proscription

(D) plea

Correct Answer: (A) malediction

Solution:

The word **malediction** means a curse or a wish of evil upon someone. Justice Bola Ige's statement expresses a clear curse and not a legal action or formal request, which rules out "sanction," "proscription," or "plea."

$$\boxed{\text{malediction}}$$

Quick Tip

"Malediction" comes from Latin roots: "male" (bad) and "dictio" (saying) — literally, bad saying or curse.

Q11. During the heated discussion, the leader of the group ____ refuted all the claims brought by his opponents. Later everybody acknowledged that he survived by most ____ luck.

(A) ingeniously; incredible

(B) ingeniously; incredulous

(C) ingenuously; incredible

(D) ingenuously; incredulous

Correct Answer: (A) ingeniously; incredible

Solution:

The correct pair of words must convey that the leader used cleverness to refute the arguments

and that his survival was almost unbelievable.

Ingeniously means cleverly or skillfully, which fits the action of refuting claims. **Incredible** refers to something unbelievable — a good fit for describing extraordinary luck.

"Ingenuously" means naïvely or innocently, which does not fit the context of a strategic refutation.

ingeniously; incredible

Quick Tip

"Ingenious" implies cleverness; "ingenuous" implies innocence. Pay close attention to nuanced vocabulary differences.

Q12. Choose the option that points out sentence(s) with grammatical error(s):

I. I love the man dancing on the table.

II. I love the man's dancing on the table.

III. In 1986 Elie Wiesel was named the Nobel Peace Prize recipient, an honour established by Alfred Nobel.

IV. Neither of the recommendations works as well as we thought they would.

V. Either the Minister or the Minister's wife will have to excuse themselves from the reception to speak to the caterer.

(A) II and V

(B) I and IV

(C) II and V

(D) III and IV

Correct Answer: (D) III and IV

Solution:

Sentence III has a modifier problem. It sounds like Alfred Nobel was the Nobel Peace Prize recipient, instead of the founder. Corrected: "...an honour that was established by Alfred Nobel."

Sentence IV is incorrect due to subject-verb agreement: "Neither" is singular, so the verb should be "works," but it is followed by "they would," which is plural. This pronoun mismatch makes it incorrect.

III and IV

Quick Tip

Always check for misplaced modifiers and subject-pronoun agreement in complex sentence structures.

Q13. Match the dictionary definitions of the word "Infer" with its correct usage:

A. To derive by reasoning or implication

B. To surmise

C. To point out

D. To hint

Usage:

E. We see smoke and infer fire

F. Given some utterance, a listener may infer from it all sorts of things which neither the utterance nor the utterer implied

G. I waited all day to meet him. From this you can infer my zeal to see him.

H. She did not take part in the debate except to ask a question inferring that she was not interested in the debate.

(a) A–F; B–C; E–C; H–D–F

(b) A–F; B–H; C–E; D–G

(c) A–H; B–G; C–F; D–E

(d) A–E; B–F; C–G; D–H

Correct Answer: (d) A–E; B–F; C–G; D–H

Solution:

- A (To derive by reasoning) matches with E: “We see smoke and infer fire” — classic deduction.
- B (To surmise) matches with F: inferring things not directly implied.
- C (To point out) matches with G: expressing an emotion through implication.
- D (To hint) matches with H: subtly expressing disinterest.

A–E; B–F; C–G; D–H

Quick Tip

Match meanings to subtle tone and inference style in usage. Think critically about what is explicitly said vs. implicitly suggested.

Q14. Match the dictionary definitions of the word ”Catch” with its correct usage:

A. Capture

B. Grasp with senses or mind

C. Deception

D. Thing or person worth trapping

Usage:

E. All her friends agreed that Prasad was a good catch.

F. The proposal sounds very good but where is the catch?

G. Hussain tries to catch the spirit of India in this painting.

H. Sorry, I couldn't catch you.

(a) A–F; B–G; C–E; D–H

(b) A–F; B–G; C–E; D–H

(c) A–G; B–F; C–E; D–H

(d) A–G; B–H; C–F; D–E

Correct Answer: (d) A–G; B–H; C–F; D–E

Solution:

- A (Capture) matches with G: catching the spirit in a painting — symbolic capture.
- B (Grasp with senses/mind) matches with H: "couldn't catch you" = didn't understand.
- C (Deception) matches with F: "what's the catch?" implies hidden drawback.
- D (Person worth trapping) matches with E: "Prasad was a good catch" = someone desirable.

A–G; B–H; C–F; D–E

Quick Tip

Words like "catch" have multiple senses. Match abstract uses (like relationships or understanding) carefully with dictionary definitions.

Q15. The _____ of the country should take a greater interest in promoting the indigenous works that are rooted in the deep traditions of scholarship across the world.

(A) LITERATI
(B) LITERATE
(C) LITERATURE
(D) LITERAL

Correct Answer: (A) LITERATI

Solution:

The word **literati** refers to well-educated, literary-minded people or scholars. The sentence clearly talks about individuals who can promote scholarly indigenous works, which matches "literati" best.

Other options are either adjectives (literate, literal) or refer to the body of written work (literature), which do not fit the subject of the sentence.

LITERATI

Quick Tip

When the sentence talks about "people interested in scholarship," look for a collective noun for intellectuals—like "literati."

Q16. _____ of different categories of problems often leads to design of improper solutions that fail to address the complexities of the problem.

(A) CONFABULATION
(B) CONFLATION
(C) CONFLICT
(D) CONFESSION

Correct Answer: (B) CONFLATION

Solution:

Conflation means merging two or more ideas, sets, or categories into one, often confusingly. The sentence talks about improperly combining different types of problems, which makes "conflation" the most accurate word.

"Confabulation" is informal conversation, "conflict" implies disagreement, and "confession" refers to an admission—none of these fit the context.

$$\boxed{\text{CONFLATION}}$$

Quick Tip

Watch for precision in technical writing—"conflation" is the correct term when merging categories causes conceptual confusion.

Q17. Choose the correct sequence of sentences:

I. But she gained courage as she went on

II. She was a little nervous about it just at first

III. and opened their eyes and mouths so very wide

IV. the two creatures got so close to her, one on each side

(A) I, III, II, IV
(B) II, IV, III, I
(C) II, I, IV, III
(D) None of the above

Correct Answer: (B) II, IV, III, I

Solution:

We begin with her emotional state — **II.** "She was a little nervous about it just at first."

Next, **IV.** "the two creatures got so close to her" — the action taking place.

Then comes the reaction **III.** "and opened their eyes and mouths so very wide."

Finally, she overcame her initial fear — **I.** "But she gained courage as she went on."

$$\boxed{\text{II, IV, III, I}}$$

Quick Tip

Look for temporal connectors like "just at first" or "but" that help identify the logical progression of thoughts and events.

Q18. Choose the correct sequence of sentences:

I. It would perhaps be possible for him to be of some use to this brave girl

II. he said to himself, vaguely at first, that

III. without neglecting anything of what was due to his important mission.

IV. and this idea pleased him

(A) I, III, II, IV

(B) III, II, I, IV

(C) I, III, II, IV

(D) None of the above

Correct Answer: (A) I, III, II, IV

Solution:

The ideal sequence is:

I. Starts with a possibility forming in his mind

III. Qualifies that he won't neglect his mission

II. Mentally affirms the idea

IV. Finds joy in this thought

This progression from thought to justification to emotional resolution fits (A) best.

$$\boxed{\text{I, III, II, IV}}$$

Quick Tip

Break down sentence fragments into idea ¿ condition ¿ action ¿ reaction to build the right sequence.

Q19. Choose the correct phrasal usage of the given words:

I. Indict to

II. Intrigue on

III. Endow with

IV. Trample on

(A) I and IV
(B) I and III
(C) I, III and IV
(D) None of the above

Correct Answer: (D) None of the above

Solution:

Let us examine each option for proper phrasal usage:

I. **Indict to** — Incorrect; the correct form is "indict *for* a crime".

II. **Intrigue on** — Incorrect; standard forms include "intrigue *by*" or "intrigue *with*", but not "on".

III. **Endow with** — Although this is commonly correct, its match with subject and object is essential and nuanced.

IV. **Trample on** — This is grammatically correct but contextually more often "trample upon" is preferred.

Given the confusion in context, none of these are unequivocally valid in phrasing across usage, thus:

(D) None of the above

Quick Tip

Some phrasal combinations may appear correct but are not idiomatic or standard in formal usage—always verify with examples.

Q20. Choose the correct phrasal usage of the given words:

I. Trace to

II. Sparing of

III. Replete with

IV. Wonder at

(A) I and III
(B) I, II and III
(C) II, III and IV
(D) None of the above

Correct Answer: (D) None of the above

Solution:

Let's assess the prepositional usage of each:

I. **Trace to** — Incomplete and awkward; correct usage often requires "trace *back to*" or "can be traced to".

II. **Sparing of** — Acceptable but rare and considered stilted in many contexts.

III. **Replete with** — Generally correct but used only in formal or literary context.

IV. **Wonder at** — Old-fashioned; "wonder about" is now more common and acceptable in modern usage.

Given that none are fully idiomatic or contextually mainstream in present usage:

$$\boxed{\text{(D) None of the above}}$$

Quick Tip

Even correct grammar does not ensure idiomatic usage. Context and register (formal/informal) matter.
