

Regulation role: On the 2024 Medicine Nobel

The **discovery** of microRNA **changed** the understanding of **gene** regulation

This year's **Nobel Prize** in Physiology, or Medicine, awarded to Victor Ambros and Gary Ruvkun, **is** for their discovery of microRNA, small RNA regulators of gene expression in **eukaryotes**, and its role in gene regulation after **transcription** — the process of making an RNA copy (messenger RNA or mRNA) of a gene's DNA sequence — and before **cellular machinery** is activated for protein production. Before the discovery of microRNAs and their role in gene regulation, it was believed that gene regulation was limited to specialised proteins called **transcription factors**, which **bind to** specific regions in DNA and determine which mRNAs are produced. In 1993, using 1 mm long **mutant roundworms** called *C. elegans*, the winners of this year's Nobel provided proof that gene regulation is not **confined** to transcription factors. Instead, regulation by microRNAs occurs at a later stage in the process of gene expression, **post-transcription**. Despite these **seminal findings**, it was initially thought that this unusual **mechanism** of gene regulation was **peculiar** to *C. elegans* and not relevant to more complex organisms, including humans. However, the **discovery** of another microRNA **encoded** in a gene present in all organisms **indicated** that microRNA's role in gene regulation extends beyond roundworms. By 2001, microRNAs were found to be **abundant** in **invertebrates** and **vertebrates**, with some highly **conserved** across species, suggesting that "microRNA-mediated post-transcriptional regulation is a general regulatory function". As per current knowledge, the human **genome codes** for over 1,000 microRNAs.

Cancer, diabetes and autoimmune diseases are **associated** with **dysregulated** microRNA expression. In the case of cancer, **dysregulation** may include **amplification** or **deletion** of microRNA genes, **abnormal transcriptional** control of microRNAs, and defects in the microRNA **biogenesis** machinery. Studies have shown that dysregulated microRNAs affect the biological capabilities that cancer cells acquire during **tumour** development, including **sustaining proliferative** signalling, **resisting** cell death, and activating processes that allow cancer cells to spread in the body. **Preliminary** studies have also indicated that certain microRNAs can serve as **potential biomarkers** for human cancer **diagnosis**, **prognosis**, and **therapeutic** targets. It is now known that beyond **perturbing immune** responses, **disruption and dysfunction** of microRNAs **can** initiate the production of **autoantibodies** and contribute to the **pathogenesis** of **autoimmune** diseases, including **rheumatoid arthritis** and multiple **sclerosis**. Several microRNA-associated diagnostic biomarkers have already been developed and used clinically, though they have yet to be **commercialised**. **Likewise**, **candidate drugs** targeting microRNAs are currently being tested in clinical trials. **[Practice Exercise]**

- Red/blue coloring of words in the sentence indicates subject verb relationship; where 'red' denotes 'subject' and 'blue' denotes 'verb'.

Vocabulary

1. **Gene** (noun) – A unit of heredity that is transferred from a parent to offspring and is held to determine some characteristic of the offspring.
2. **Eukaryote** (noun) – An organism whose cells contain a nucleus and other organelles enclosed within membranes.
3. **Transcription** (noun) – The process of copying a segment of DNA into RNA.
4. **Cellular Machinery** (noun) – The complex system of molecules and structures within a cell that perform the necessary functions for cellular life. कोशिकीय तंत्र
5. **Transcription factors** (noun) – Proteins that control the rate of transcription of genetic information from DNA to RNA by binding to specific DNA sequences.
6. **Bind** (to) (verb) – To attach or connect to a specific molecule or receptor site. बंधना
7. **Mutant** (adjective) – A form resulting from a change in the structure of a gene. उत्परिवर्तित
8. **Roundworm** (noun) – A type of worm that is round in cross-section, often used as a model organism in genetic research.
9. **Confined** (to) (adjective) – Limited or restricted to a certain scope or area. सीमित
10. **Post-transcription** (noun) – Referring to the period or processes that occur after the transcription of DNA to RNA.
11. **Seminal** (adjective) – Highly original and influential in establishing the basis for future work or studies. महत्वपूर्ण
12. **Finding** (noun) – A conclusion reached after an examination or investigation. निष्कर्ष
13. **Mechanism** (noun) – A system of parts working together in a machine or biological context. यांत्रिकी
14. **Peculiar** (adjective) – Distinctive or unique in a particular way; unusual. विशिष्ट
15. **Encode** (verb) – To convert information into a particular form or code. एन्कोड करना
16. **Abundant** (adjective) – Existing or available in large quantities. प्रचुर
17. **Invertebrate** (noun) – An animal lacking a backbone, such as insects, mollusks, or worms. अकशेरुकी
18. **Vertebrate** (noun) – An animal that has a backbone, such as mammals, birds, reptiles, amphibians, and fish. कशेरुकी
19. **Conserve** (verb) – To protect or preserve something, especially from loss or harm. संरक्षित करना
20. **Genome** (noun) – The complete set of genes or genetic material present in a cell or organism. जीनोम

21. **Code** (verb) – To specify the genetic sequence that determines a trait or protein structure. सांकेतिक शब्दों में बदलना
22. **Associated** (with) (adjective) – Connected or related to something in some way. जुड़ा हुआ
23. **Dysregulated** (adjective) – Malfunctioning or improperly regulated, usually in reference to biological processes. असंतुलित
24. **Dysregulation** (noun) – The abnormality or malfunction in the regulation of a process. असंतुलन
25. **Amplification** (noun) – The process of increasing or enlarging the quantity or size of something. विस्तार
26. **Deletion** (noun) – The removal or absence of a segment of DNA or a gene. विलोपन/ हटाना
27. **Abnormal** (adjective) – Deviating from the normal or standard; irregular. असामान्य
28. **Transcriptional** (adjective) – Relating to or affecting the process of transcription in gene expression. प्रतिलेखन से संबंधित
29. **Biogenesis** (noun) – The process by which living organisms are produced from other living organisms. जैवउत्पत्ति
30. **Tumour** (noun) – An abnormal mass of tissue that may be benign or malignant. ट्यूमर
31. **Sustain** (verb) – To support or maintain the continuation of something. बनाए रखना
32. **Proliferative** (adjective) – Relating to or characterized by rapid growth or multiplication of cells. वृद्धि संबंधी
33. **Resist** (verb) – To withstand or oppose a force or condition. विरोध करना
34. **Preliminary** (adjective) – Occurring before something more important; initial or preparatory. प्रारंभिक
35. **Potential** (adjective) – Having the capacity to develop into something in the future. संभावित
36. **Biomarker** (noun) – A measurable indicator of a biological state or condition. जैवचिन्ह
37. **Diagnosis** (noun) – The identification of the nature of an illness or other problem through examination. निदान
38. **Prognosis** (noun) – The predicted course or outcome of a disease or situation. पूर्वानुमान लक्षण आधारित रोग निदान
39. **Therapeutic** (adjective) – Relating to the healing of disease or the treatment of disorders. चिकित्सीय
40. **Perturb** (verb) – To disturb or unsettle a process or system. बाधा डालना
41. **Immune** (adjective) – Protected or resistant to a disease or condition. प्रतिरक्षी
42. **Autoantibody** (noun) – An antibody produced by the immune system that mistakenly targets the body's own tissues. स्वप्रतिरक्षक

43. **Pathogenesis** (noun) – The process by which a disease or disorder develops. रोगजनन
44. **Autoimmune** (adjective) – Relating to a condition in which the body's immune system attacks its own tissues. स्व-प्रतिरक्षा
45. **Rheumatoid arthritis** (noun) – A chronic autoimmune disorder that primarily affects joints, causing pain and inflammation.
46. **Sclerosis** (noun) – A condition characterized by hardening of tissue, often due to chronic inflammation or degeneration. कठिन्य
47. **Commercialise** (verb) – To manage or exploit something in a way designed to make a profit. व्यावसायिक बनाना
48. **Likewise** (adverb) – In the same way or manner; similarly. इसी प्रकार
49. **Candidate drug** (noun) – A drug that is in development and is being tested for potential therapeutic use. संभावित दवा

Summary of the Editorial

1. Nobel Prize in Medicine 2024: Awarded to Victor Ambros and Gary Ruvkun for their discovery of microRNAs, small RNA regulators that play a crucial role in gene regulation in eukaryotes.
2. Gene Regulation Paradigm Shift: The discovery of microRNAs changed the traditional understanding of gene regulation, which was earlier believed to be controlled only by transcription factors.
3. Role in Gene Regulation: MicroRNAs regulate gene expression post-transcription, which is the stage after mRNA is created from a DNA sequence and before protein production begins.
4. Initial Discovery: In 1993, Ambros and Ruvkun demonstrated microRNA's regulatory role using *C. elegans*, a 1mm-long roundworm.
5. Extension to Other Organisms: Initially considered unique to *C. elegans*, microRNAs were later found to play a regulatory role in more complex organisms, including humans.
6. Prevalence of MicroRNAs: By 2001, microRNAs were discovered to be abundant in invertebrates and vertebrates, suggesting their regulatory role is conserved across species.
7. MicroRNA in Human Genome: The human genome codes for over 1,000 microRNAs, indicating their widespread influence on gene expression.
8. Impact on Diseases: Dysregulated microRNA expression is associated with several diseases, including cancer, diabetes, and autoimmune disorders.
9. MicroRNAs in Cancer: In cancer, dysregulation may involve amplification, deletion, or defective transcriptional control of microRNA genes, impacting tumor growth and spread.
10. Biological Effects in Cancer: Dysregulated microRNAs contribute to sustaining proliferative signaling, evading cell death, and enabling cancer cell invasion.
11. Potential Biomarkers: Certain microRNAs are being studied as potential biomarkers for cancer diagnosis, prognosis, and as therapeutic targets.
12. Autoimmune Diseases: Dysregulated microRNAs can disrupt immune responses and contribute to diseases like rheumatoid arthritis and multiple sclerosis by producing autoantibodies.
13. Diagnostic Biomarkers: Several microRNA-associated biomarkers have been developed for clinical use, though commercial availability is still pending.
14. Therapeutic Applications: Drugs targeting specific microRNAs are currently undergoing clinical trials, showing promise for future treatments.
15. Broader Implications: The discovery highlights the significance of post-transcriptional regulation in genetic expression and opens new avenues for disease treatment and diagnosis.

Practice Exercise: SSC Pattern Based

[Editorial Page]

- 1. What is the tone of the passage?**
 - A. Informative and Analytical
 - B. Critical
 - C. Optimistic
 - D. Sarcastic
- 2. Which of the following statements best describes the primary significance of the Nobel Prize-winning discovery related to microRNAs?**
 - A. It proved that gene regulation is solely dependent on transcription factors.
 - B. It established that microRNAs regulate gene expression post-transcriptionally in eukaryotic organisms.
 - C. It demonstrated that gene regulation occurs only in roundworms and not in complex organisms.
 - D. It showed that protein production is initiated before mRNA is produced.
- 3. Why was the initial significance of microRNA's role in gene regulation underestimated?**
 - A. It was believed to be a unique mechanism only applicable to roundworms.
 - B. It was thought to be a process that disrupts protein production.
 - C. It was assumed to have no effect on gene regulation in eukaryotes.
 - D. It was seen as a redundant function performed by transcription factors.
- 4. Which of the following can be inferred from the passage regarding the role of microRNAs in human diseases?**
 - A. Dysregulation of microRNAs is a key factor in the development of multiple human diseases.
 - B. The primary role of microRNAs is to regulate immune responses in autoimmune diseases.
 - C. MicroRNAs only play a role in cancer by sustaining proliferative signaling.
 - D. MicroRNAs are primarily known for their role in normal cellular functions, with little involvement in diseases.
- 5. What is the meaning of the word "biogenesis" as used in the context of the passage?**
 - A. The origin or creation of microRNAs.
 - B. The destruction of cellular components.
 - C. The natural death of cells.
 - D. The resistance to cell death.
- 6. Select the option that will improve the given sentence by using the most appropriate verb.**

Alexa have being working as a teacher for five years now.

 - A. Alexa has being working as a teacher for five years now.
 - B. Alexa is being working as a teacher for five years now.
 - C. Alexa has been working as a teacher for five years now.
 - D. Alexa was been working as a teacher for five years now
- 7. The given sentence is divided into four segments. Identify the segment that contains a grammatical error.**

A great / culture of hospitality of / the Spanish / is well-known

 - A. is well-known.

- B. A great
- C. culture of hospitality of
- D. the Spanish

8. **Parts of the following sentence have been given as options. Select the option that contains an error.**

There was an gang of thieves spotted at our local bank, make sure to be careful.

- A. There was an gang
- B. of thieves spotted
- C. make sure to be careful
- D. at our local bank

9. **The following sentence has been split into four segments. Identify the segment that contains a grammatical error.**

After a while, / she look up / and saw that / it was getting dark

- A. After a while
- B. she look up
- C. and saw that
- D. it was getting dark

Comprehension:

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

How does a camel survive in the desert? Many people think that the camel stores water in its hump, but the hump is really made up of fats. When a camel (1)_____ find water, it passes less urine to conserve (2)_____ small amount of water it has in its body. Furthermore, the camel has a higher body temperature than (3)_____ of most mammals. This means that it starts to sweat (4)_____ a higher temperature than that which human beings, for example, (5)_____ to perspire. This also helps it to keep water loss through sweating to a minimal

10. **Select the most appropriate option to fill in blank number 1.**

- A. cannot
- B. hasn't
- C. do not
- D. can

11. **Select the most appropriate option to fill in blank number 2.**

- A. a
- B. which
- C. very
- D. the

12. **Select the most appropriate option to fill in blank number 3.**

- A. all
- B. the
- C. that
- D. some

13. **Select the most appropriate option to fill in blank number 4.**

- A. with
B. in
C. for
D. at
14. **Select the most appropriate option to fill in blank number 5.**
A. starts
B. started
C. start
D. starting
15. **Select the most appropriate option that can substitute the underlined segment in the given sentence.**
Grasslands should not be foraged and some places are to be closed for grazing.
A. grazed and some places is
B. cut and few areas
C. over-grazed and some areas should be
D. planted or
16. **Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.**
I quietly went out at the door into the veranda.
A. No substitution required
B. by
C. from
D. through
17. **Identify the most appropriate ANTONYM of the underlined word in the following sentence.**
Harry's behaviour was very blunt during his school days
A. Excited
B. Polite
C. Curious
D. Dull
18. **Select the most appropriate option to fill in the blank.**
It is the _____ to reach Delhi.
A. quickest route
B. strongest route
C. lowest route
D. fastest route
19. **Select the option with the correct spelling to replace the underlined word in the given sentence.**
A natural clamity causing huge destruction and loss of life and property
A. calamitey
B. clamanity
C. climanity
D. calamity

20. Select the most appropriate synonym of the given word.

Luminous

- A. Luxurious
- B. Laborious
- C. Radiant
- D. Amiable

21. Select the most appropriate option to substitute the underlined segment in the given sentence.

Shantanu always buries his head in the sand whenever he explains his professional failures to his father

- A. escapes from all the difficulties
- B. blames the others for his mistakes
- C. hides from the truth
- D. shows a blind eye against social issues

22. Fill in the blank with the most appropriate ANTONYM of the underlined word.

In spring the leaves are bright green, whereas they appear _____ in autumn

- A. dull
- B. dazzling
- C. luminous
- D. gleaming

23. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Things that do not come from the ground not safe to compost

- A. be not safe
- B. has not been safe
- C. is not safe
- D. are not safe

24. Select the most appropriate option to fill in the blank.

The _____ of the whale is 2 tonnes.

- A. vet
- B. wait
- C. weight
- D. wet

25. Select the most appropriate meaning of the underlined idiom in the given sentence.

He got medals time after time by following the instructions of his mentor.

- A. Repeatedly
- B. Rarely
- C. Once
- D. Twice

Answers

1. A 2. B 3.A 4.A 5.A 6. C 7. B 8. A 9. B 10.A 11.D 12.C
 13. D 14. C 15. C 16.D 17. B 18.D 19.D 20. C 21.C 22. A 23. D 24. C
 25. A

[Practice Exercise]

Explanations

1. A) Informative and Analytical

A: The passage provides detailed information about the role of microRNA in gene regulation, discusses scientific findings, and analyzes its implications for diseases like cancer and autoimmune disorders.

B: This option is incorrect because the passage does not criticize or evaluate the work negatively; it only discusses the discoveries in an objective manner.

C: The passage does not express hope or positivity about future developments; it remains factual and analytical throughout.

D: The passage maintains a serious tone and does not use irony or sarcasm in discussing the scientific content.

2. B) It established that microRNAs regulate gene expression post-transcriptionally in eukaryotic organisms.

A is incorrect because the passage specifically mentions that before the discovery of microRNAs, it was believed that gene regulation was limited to transcription factors. The discovery showed otherwise.

C is incorrect as the passage states that microRNAs are present in both invertebrates and vertebrates, and not just in roundworms.

D is incorrect because protein production begins after the formation of mRNA, not before it. The passage clearly outlines that microRNAs regulate gene expression post-transcriptionally, which is after mRNA is produced.

3. A) It was believed to be a unique mechanism only applicable to roundworms.

A is correct because the passage indicates that the initial findings were considered peculiar to *C. elegans* and not relevant to more complex organisms. Later research revealed that microRNA's regulatory function is conserved across various species.

B is incorrect because there is no mention in the passage that microRNAs disrupt protein production; instead, they regulate gene expression.

C is incorrect since the passage explains that microRNAs are involved in regulating gene expression, especially after transcription.

D is incorrect because the passage states that microRNAs work in a manner different from transcription factors, and their function is not redundant but a distinct regulatory mechanism.

4. A) Dysregulation of microRNAs is a key factor in the development of multiple human diseases.

A is correct because the passage highlights that dysregulated microRNA expression is associated with diseases like cancer, diabetes, and autoimmune diseases, making it a critical factor in disease development.

B is incorrect because, while microRNAs do regulate immune responses, their role is not limited to this function; they are also involved in other processes like tumor development and cell death resistance.

C is incorrect as it narrows down the role of microRNAs in cancer to just proliferative signaling, whereas the passage mentions additional roles such as resisting cell death and spreading in the body.

D is incorrect because the passage emphasizes the involvement of microRNAs in diseases, not just in normal cellular functions.

5. A) The origin or creation of microRNAs.

A is correct because "biogenesis" refers to the process of the formation or creation of something, and in the context of the passage, it specifically relates to the formation of microRNAs.

B is incorrect because "destruction" is the opposite of what biogenesis entails. Biogenesis refers to creation, not destruction.

C is incorrect because biogenesis does not mean the natural death of cells; it refers to the creation or formation of microRNAs.

D is incorrect because biogenesis has no direct relation to resistance to cell death. It is concerned with the production or origin of biological molecules or cells.

6. C) 'Alexa has been working as a teacher for five years now

'have being working' के बदले 'has been working' का प्रयोग होगा क्योंकि 'Alexa' एक Singular Noun है और Present Perfect Continuous Tense में, Singular Subject के साथ 'has been' का प्रयोग होता है। उदाहरण के लिए: She has been working as a teacher for five years.

- 'has been working' will be used instead of 'have being working' because 'Alexa' is a singular noun, and in the Present Perfect Continuous Tense, 'has been' is used with singular subjects. For example: She has been working as a teacher for five years.

7. B) 'the great' का प्रयोग 'a great' के बदले होगा क्योंकि 'the' का उपयोग तब किया जाता है जब किसी विशिष्ट या अद्वितीय वस्तु या समूह की बात की जा रही हो। इस वाक्य में 'the Spanish' का जिक्र एक विशेष समूह के रूप में किया गया है, इसलिए 'the great' का प्रयोग होना चाहिए। जैसे— "The great culture of hospitality of the Spanish is well-known."

- 'the great' will be used instead of 'a great' because 'the' is used when referring to a specific or unique entity or group. In this sentence, 'the Spanish' is being mentioned as a particular group, so 'the great' should be used. Like— "The great culture of hospitality of the Spanish is well-known."

8. A) an' के बदले 'a' का प्रयोग होगा क्योंकि 'gang' एक Singular Countable Noun है और उसके पहले vowel sound नहीं है अतः 'a' का प्रयोग होगा; जैसे— There was a gang of thieves spotted at our local bank.

- 'a' will be used instead of 'an' because 'gang' is a Singular Countable Noun and it does not start with a vowel sound, so 'a' will be used; Like— There was a gang of thieves spotted at our local bank.

9. B) 'look' के बदले 'looked' का प्रयोग होगा क्योंकि वाक्य past की घटनाओं का वर्णन कर रहा है। वाक्य के अन्य भाग जैसे 'saw' और 'was getting' Past Tense में हैं, इसलिए 'look' भी Past Tense में 'looked' होना चाहिए। जैसे— "After a while, she looked up and saw that it was getting dark."

- 'looked' will be used instead of 'look' because the sentence is describing past events. Other parts of the sentence, like 'saw' and 'was getting,' are in the Past Tense, so 'look' should also be in the Past Tense as 'looked.' Like— "After a while, she looked up and saw that it was getting dark."

10. A) **Cannot**' का use होगा क्योंकि "cannot" का अर्थ है 'न कर पाना' या 'असमर्थ होना'। sentence में कहा गया है कि जब ऊंट पानी नहीं पा सकता, तो वह कम मूत्र पास करता है ताकि अपने शरीर में मौजूद थोड़ी सी पानी की मात्रा को बचा सके। इसलिए 'cannot' यहाँ सही है। जबकि 'hasn't' का अर्थ है 'नहीं है', 'do not' का अर्थ है 'नहीं करते', और 'can' का अर्थ है 'कर सकता है', जो इस context में सही नहीं है।

- **'Cannot'** is used because "cannot" means 'unable to' or 'not able to.' The sentence indicates that when a camel cannot find water, it passes less urine to conserve the small amount of water it has in its body. Therefore, 'cannot' is appropriate here. While 'hasn't' means 'does not have,' 'do not' means 'do not do,' and 'can' means 'is able to,' which are not correct in this context.
11. D) **The'** का उपयोग होगा क्योंकि 'the' एक निश्चित article है जो किसी विशेष या ज्ञात संज्ञा को संदर्भित करता है। यहाँ "the small amount of water" किसी विशिष्ट पानी की मात्रा को संदर्भित कर रहा है जो ऊँट के शरीर में है। इसलिए 'the' सही है। जबकि 'a' एक अनिश्चित article है और यह किसी सामान्य या अज्ञात संज्ञा को संदर्भित करता है, 'which' एक relative pronoun है और यहाँ उपयुक्त नहीं है, और 'very' एक adverb है जो यहाँ contextually सही नहीं है।
- **The'** will be used because 'the' is a definite article that refers to a specific or known noun. Here, "the small amount of water" refers to a specific amount of water in the camel's body. Hence, 'the' is correct. Whereas, 'a' is an indefinite article and refers to a general or unknown noun, 'which' is a relative pronoun and not suitable here, and 'very' is an adverb which is contextually incorrect.
12. C) **that'** का उपयोग होगा क्योंकि यह स्पष्ट करता है कि यहाँ ऊँट के शरीर का तापमान अन्य स्तनधारियों के तापमान से तुलना की जा रही है। यह context के अनुसार सही है। जबकि 'all' का मतलब है सभी, 'the' का मतलब है विशेष रूप से, और 'some' का मतलब है कुछ, जो इस context में सही नहीं बैठते।
- **that'** will be used because it specifies that the camel's body temperature is being compared to that of other mammals. This is contextually accurate. Whereas 'all' means every, 'the' implies specificity, and 'some' means a few, which do not fit in this context.
13. D) **At'** का उपयोग होगा क्योंकि यहाँ body temperature का उच्चतम बिंदु दर्शाने के लिए 'at' सही प्रीपोजिशन है। Sentence में बताया गया है कि ऊँट एक उच्च तापमान पर पसीना बहाना शुरू करता है, जो 'at' के प्रयोग को सही बनाता है। जबकि 'with' का अर्थ है 'साथ में', 'in' का अर्थ है 'के अंदर', और 'for' का अर्थ है 'के लिए', जो इस context में सही नहीं हैं।
- **At'** will be used because it correctly indicates a specific point or level, in this case, the body temperature at which the camel starts to sweat. The sentence states that the camel starts to sweat at a higher temperature, making 'at' the appropriate choice. Whereas, 'with' means 'together with', 'in' means 'inside', and 'for' means 'for the purpose of', which do not fit in this context.
14. C) the verb form that follows "than that which human beings" should be in the present tense because the passage is discussing a general fact. The correct tense is "start" because it refers to a habitual action or fact, not something that has already happened.
- Human beings are plural subject for which plural verb require so option C is correct here.
15. C) 'over-grazed and some areas should be' का प्रयोग होगा क्योंकि वाक्य में 'Grasslands should not be foraged' में 'foraged' का प्रयोग सही नहीं है। यहाँ पर सही शब्द 'over-grazed' होगा, जो अत्यधिक चरने की क्रिया को व्यक्त करता है। इसके अलावा, 'some places are to be closed' को 'some areas should be' से बदला जाएगा, क्योंकि यह वाक्य को अधिक स्पष्ट और सही बनाता है। जैसे— Grasslands should not be over-grazed and some areas should be closed for grazing.

'over-grazed and some areas should be' will be used because in the sentence 'Grasslands should not be foraged', the word 'foraged' is not appropriate. The correct word should be 'over-grazed', which expresses the action of excessive grazing. Additionally, 'some places are to be closed' will be changed to 'some areas should be' as it makes the sentence clearer and more accurate. Like— Grasslands should not be over-grazed and some areas should be closed for grazing.

16. D) 'at' के बदले **'through'** का प्रयोग होगा क्योंकि सही preposition 'through' है जब हम किसी चीज़ के अंदर से बाहर जाते हैं; जैसे— I quietly went out through the door into the veranda.

- **'through'** will be used instead of 'at' because the correct preposition is 'through' when we move from inside to outside through something; Like— I quietly went out through the door into the veranda.

17. B) **Blunt** (adjective) – straightforward, frank, direct, abrupt, curt. स्पष्ट

Antonym: **Polite** (adjective) – having or showing behavior that is respectful and considerate of other people, courteous, mannerly, civil. विनम्र

- **Excited** (adjective) – very enthusiastic and eager, thrilled, animated, exhilarated. उत्साहित
- **Curious** (adjective) – eager to know or learn something, inquisitive, interested, intrigued. जिज्ञासु
- **Dull** (adjective) – lacking interest or excitement, boring, tedious, uninteresting. उबाऊ

18. D) **fastest route** का उपयोग होगा क्योंकि "fastest route" का अर्थ होता है सबसे तेज़ मार्ग। sentence में बताया गया है कि दिल्ली पहुंचने का सबसे तेज़ तरीका कौन सा है, इसलिए 'fastest route' यहाँ सही है। जबकि 'quickest route' का भी अर्थ तेज़ होता है लेकिन fastest का प्रयोग यात्रा और दूरी को नापने में अधिक होता है। 'strongest route' का अर्थ सबसे मजबूत मार्ग होता है, और 'lowest route' का अर्थ सबसे निम्न मार्ग होता है, जो इस context में सही नहीं है।

- 'fastest route' will be used because it means the quickest way. The sentence is about the fastest way to reach Delhi, making 'fastest route' appropriate here. While 'quickest route' also means quick, 'fastest' is more commonly used in the context of travel and measuring distance. 'strongest route' means the most robust route, and 'lowest route' means the route with the lowest elevation, which don't fit in this context.

19. D) The correct spelling of 'clamity' is '**calamity**' which means "a great and sudden disaster or misfortune" आपदा, विपत्ति.

20. C) **Luminous** (adjective) – Emitting or reflecting light, shining, glowing. प्रकाशमान, चमकदार

Synonym: **Radiant** (adjective) – Sending out light, shining, bright, glowing. तेजस्वी

- **Luxurious** (adjective) – Extremely comfortable, elegant, or enjoyable, especially in a way that involves great expense. विलासितापूर्ण
- **Laborious** (adjective) – Requiring considerable time and effort, strenuous, hard. श्रमसाध्य
- **Amiable** (adjective) – Having or displaying a friendly and pleasant manner, affable, genial. मित्रवत

21. C) **Hides from the truth** (phrase) – Avoiding facing the reality or truth of a situation. सच्चाई से बचना या सच्चाई का सामना न करना।

- **Escapes from all the difficulties** (phrase) – To avoid or get away from challenges or problems. मुश्किलों से बचना या उनसे दूर जाना।
- **Blames the others for his mistakes** (phrase) – To attribute one's own failures or errors to other people. अपनी गलतियों के लिए दूसरों को दोष देना।
- **Shows a blind eye against social issues** (phrase) – To ignore or pretend not to notice problems, especially those that affect society. सामाजिक समस्याओं को नजरअंदाज करना या उन्हें नहीं देखने का नाटक करना।

22. A) **Bright** (adjective) – Shining, full of light, vivid, radiant. चमकदार

Antonym: **Dull** (adjective) – Lacking brightness, lusterless, drab, matte. नीरस

- **Dazzling** (adjective) – Extremely bright, shining, radiant, glittering. चमचमाता
- **Luminous** (adjective) – Emitting light, glowing, radiant. प्रकाशमान
- **Gleaming** (adjective) – Shining brightly, sparkling, glossy. चमकता हुआ

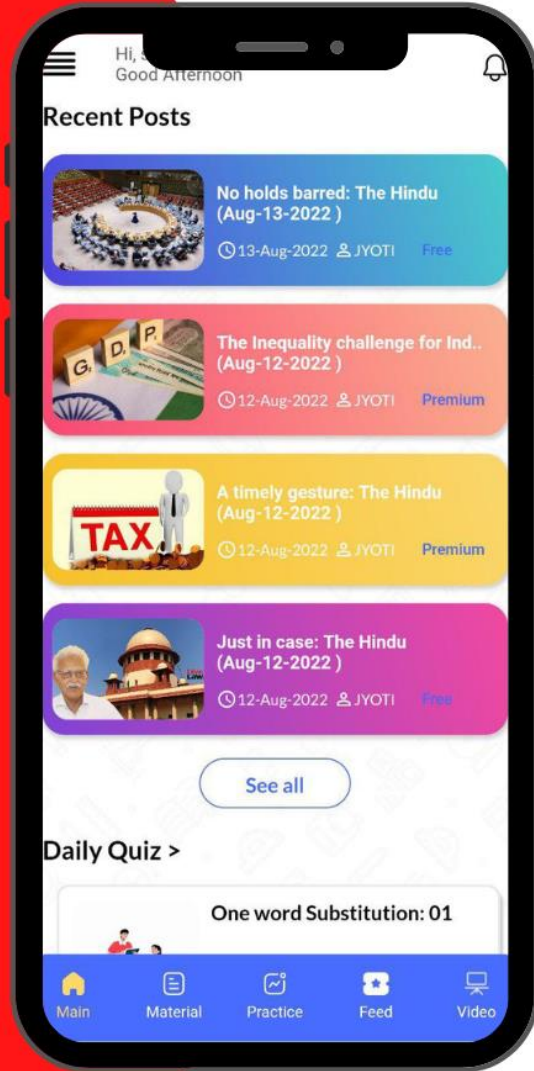
23. D) 'are not safe' का प्रयोग 'not safe' के बदले होगा क्योंकि वाक्य में 'Things' subject plural है। इसलिए verb भी plural होनी चाहिए। Present Tense में plural verb के लिए 'are' का प्रयोग होता है। अतः सही option 'are not safe' है; जैसे— "Things that do not come from the ground are not safe to compost."

- 'are not safe' will be used instead of 'not safe' because the subject 'Things' is plural in the sentence. Therefore, the verb should also be plural. In the Present Tense, 'are' is used for plural verbs. Hence, the correct option is 'are not safe'; Like— "Things that do not come from the ground are not safe to compost."

24. C) **'Weight'** का use होगा क्योंकि "weight" का अर्थ होता है किसी वस्तु का भार या वजन। sentence में mention किया गया है कि व्हेल का वजन 2 टन है, इसलिए 'weight' यहाँ सही है। जबकि 'Vet' का अर्थ है पशु चिकित्सक, 'Wait' का अर्थ है प्रतीक्षा करना, और 'Wet' का अर्थ है गीला होना, जो इस context में सही नहीं है।

- **'Weight'** will be used because it means the heaviness or mass of an object. The sentence mentions that the whale's weight is 2 tonnes, making 'weight' fitting here. Whereas, 'Vet' means an animal doctor, 'Wait' means to remain or stay, and 'Wet' means to be covered with liquid, which don't fit in this context.

25. A) **Time after time** (idiom) – Repeatedly



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