Medistudents

UCAT Practice: Question Examples

Verbal Reasoning

Passage 1

Andrew Wyeth started drawing at a young age. He was a draftsman before he could read. By the time he was a teenager, his father, Newell Convers (N.C.) Wyeth brought him into his studio for the only art lessons he ever had, inspiring his son's love of rural landscapes, sense of romance, and artistic traditions. Although creating illustrations was not a passion he wished to pursue, Wyeth produced illustrations under his father's name while in his teens.

With his father's guidance, he mastered figure study and watercolour, later learning egg tempera from his brother-in-law Peter Hurd. He studied art history on his own, admiring many masters of Renaissance and American painting, especially Winslow Homer.

N.C. also fostered an inner self-confidence to follow one's own talents without thought of how the work is received. N.C. wrote in a letter to Wyeth in 1944:

"Great men... forever radiate a sharp sense of that profound requirement of an artist, to fully understand that consequences of what he creates are unimportant. Let the motive for action be in the action itself and not in the event. I know from my own experience that when I create with any degree of strength and beauty I have no thought of consequences. Anyone who creates for effect—to score a hit—does not know what he is missing!"

To be a great artist, according to Wyeth's father, required emotional depth, an openness to look beyond self to the subject, and passion.

In October 1945, Wyeth's father and his three-year-old nephew were killed when their car stalled on railroad tracks and was struck by a train. Wyeth referred to his father's death as a formative emotional event in his artistic career, in addition to being a personal tragedy. Shortly afterwards, Wyeth's art consolidated into his mature and enduring style.

Adapted from Wikipedia: https://en.wikipedia.org/wiki/Andrew_Wyeth

Question 1 (True/False/Can't tell) Andrew Wyeth followed in his father's footsteps as an illustrator.

A. True B. False C. Can't tell

Correct Answer: C

Explanation

The text tells us that "creating illustrations was not a passion [Andrew Wyeth] wished to pursue" and also that "Wyeth produced illustrations under his father's name while in his teens." Neither of these statements definitively inform the reader whether Andrew became an illustrator when he grew up, and the rest of the passage does not clarify beyond the mention of Wyeth's "artistic career", which may or may not refer to illustration. We therefore cannot tell.

Question 2 (Incomplete statement) Andrew Wyeth's father urged him to create art for the sake of:

A. The art itself

- B. The ramifications that art has on society
- C. Recognition as an artist
- D. Earning an honest living

Correct Answer: A

Explanation

We know A is the correct answer due to N.C. Wyeth's quote: "Let the motive for action be in the action itself and not in the event." The action referred to here is the art an artist creates.

B is incorrect; N.C Wyeth outlines "that profound requirement of an artist, to fully understand that consequences of what he creates are unimportant," i.e. any ramifications that art has on society do not matter to the artist.

C is incorrect; in N.C. Wyeth's words, "anyone who creates for effect—to score a hit—does not know what he is missing!" – i.e. that fame and recognition is unimportant to him.

D is incorrect: no mention of monetary reward is observed in N.C. Wyeth's advice to his son.

Question 3 (According to the passage)

According to the passage, what information can be inferred regarding Andrew Wyeth's style as an artist?

A. It was primarily illustrative, owing to his work as an illustrator for his father during his teens

B. It was modelled after the American artist Winslow Homer

C. It was provocative, with little regard for how it was received critically

D. It was solidified only after the death of his father and young nephew

Correct Answer: D

Explanation

A is incorrect, as the passage does not mention any attributes of Andrew Wyeth's style.

B is incorrect; in paragraph two, Winslow Homer is credited by the passage as being admired by Andrew Wyeth, but not as a basis for his artistic style.

C is incorrect; while the passage mentions in paragraph three that N.C. Wyeth urged his son not to regard how his art was received critically, it does not mention how Andrew himself valued this advice or how it translated to his artistic style.

D is correct, according to information in paragraph six: "Shortly [after the death of his father and nephew], Wyeth's art consolidated into his mature and enduring style," meaning that his art style for much of his career was established after this event.

Question 4 (Most likely)

The following are presented as interpretations of N.C. Wyeth's opinions on art given in the fourth paragraph. Which is the most likely to be true?

A. Rebellion against authority is required to achieve success as an artist

B. The tendency to create without consideration of consequence is primarily a male characteristic

C. When one finds worth in an act oneself, the opinion others have on that act it is irrelevant

D. Those who create art merely to achieve success are mentally incapable of creating something truly worthwhile

Correct Answer: C

Explanation

A is incorrect; N.C. Wyeth believed an artist should "have no thought of consequences," which may imply a disregard for authority but does not necessarily imply a stance of opposition towards authority.

B is incorrect; though N.C. Wyeth uses exclusively male pronouns in his argument, and claims that "great men... have no thought of consequences," etc., he does not state that this trait is exclusively male.

C is correct; N.C. Wyeth outlines in paragraph four "that profound requirement of an artist, to fully understand that consequences of what he creates are unimportant," i.e. any ramifications that art has on society do not matter to the artist.

D is incorrect; Wyeth states that "anyone who creates for effect—to score a hit—does not know what he is missing!" This assertion does not necessarily imply an inability to create something worthwhile.

Passage 2

Erwin Schrödinger was a Nobel Prize-winning Austrian-Irish quantum physicist. Schrödinger was born in Erdberg, Vienna, Austria, in 1887. His mother was of half Austrian and half English descent; his father was Catholic and his mother was Lutheran. Although he was raised in a religious household as a Lutheran, he himself was an atheist. However, he had strong interests in Eastern religions and pantheism, and he used religious symbolism in his works. He believed his scientific work was an approach to the divine, albeit in an intellectual sense.

In 1920, Schrödinger married Annemarie (Anny) Bertel. Schrödinger had an unconventional personal life. When he migrated from Nazi-controlled Austria to Ireland in 1938, he obtained visas for himself, his wife and also another woman, Mrs. Hilde March. March was the wife of an Austrian colleague and Schrödinger had fathered a daughter with her in 1934. Schrödinger wrote personally to the Irish Taoiseach, Éamon de Valera, to obtain the visa for Mrs. March. In October 1939 the ménage à trois duly took up residence in Dublin. Schrödinger fathered two further daughters by two different women during his time in Ireland.

In 1961, Schrödinger died of tuberculosis, aged 73, in Vienna. He left Anny a widow, and was buried in Alpbach, Austria, in a Catholic cemetery. Although he was not Catholic, the priest in charge of the cemetery permitted the burial after learning Schrödinger was a member of the Pontifical Academy of Sciences. His wife, Anny (born 1896) died on 3 October 1965. Schrödinger's grandson, Professor Terry Rudolph, has followed in his footsteps as a quantum physicist, and teaches at Imperial College London.

Adapted from Wikipedia: https://en.wikipedia.org/wiki/Erwin_Schr%C3%B6dinger

Question 1 (Most likely)

What was Erwin Schrödinger's most likely stance on religion?

- A. He was an atheist with a disdain for faith
- B. He was a secretive Lutheran
- C. He believed that his work would enable him to achieve godhood himself
- D. He appreciated the value of spiritualism and expressed this through science

Correct Answer: D

Explanation

A is not likely to be true. In paragraph one it is mentioned that though Schrödinger was an atheist, ", he had strong interests in Eastern religions and pantheism, and he used religious symbolism in his works." Therefore a disdain for faith is unlikely.

B is incorrect. Paragraph one clearly states that Schrödinger was an atheist

C is not likely to be true. "[Schrödinger] believed his scientific work was an approach to the divine, albeit in an intellectual sense," according to paragraph one. His approach to divinity was not a literal one.

D is most likely to be true, according to the information in paragraph one, "[Schrödinger] used religious symbolism in his works. He believed his scientific work was an approach to the divine, albeit in an intellectual sense." His interest in religion and spiritualism was evident in his scientific work and his philosophy on this scientific work clearly showed an appreciation of the divine as religion does.

Question 2 (Incomplete statement) When Erwin Schrödinger migrated to Ireland...

- A. His unusual domestic life proved a setback
- B. He did so to abscond with his mistress, Hilde March
- C. He and his wife lacked visas
- D. He did so to flee the Nazi regime

Correct Answer: A

Explanation

A is correct. According to paragraph two, "Schrödinger wrote personally to the Irish Taoiseach, Éamon de Valera, to obtain the visa for Mrs. March." His emigration is implied to have been hindered by the work involved in getting his mistress the appropriate paperwork.

B is incorrect. Paragraph two states that his wife also took up residence in Ireland, so any inference of absconding with a mistress, i.e. that his wife was in the dark about their relationship, is unfounded.

C is incorrect. According to paragraph two, Schrödinger only had to write to de Valera to obtain a visa for Ms. March. It can be reasonably inferred that he and his wife possessed visas.

D is incorrect. The Nazi occupation of Austria is mentioned in paragraph two, but his motivations for leaving are not.

Question 3 (According to the passage)

According to the passage, why was Schrödinger permitted to be buried in a Catholic cemetery?

- A. His father was a Catholic
- B. He obtained a special dispensation from Éamon de Valera, the leader of a notably Catholic country
- C. He had affiliated with the Church through his work in science
- D. He used religious symbolism in his works

Correct Answer: C

Explanation

A is incorrect. Schrödinger's father was a Catholic, according to paragraph one, but there is no evidence in the passage that this was the reason he was permitted to be buried in a Catholic cemetery.

B is incorrect. This information is not corroborated by the passage.

C is correct; according to information in paragraph three, Schrödinger was a member of the Pontifical Academy of Sciences. It can reasonably be inferred that this organisation was affiliated with the Church given that Schrödinger's association with said organisation allowed him to be given special treatment by the Church.

D is incorrect. Schrödinger's work did contain religious symbolism, according to paragraph one, but there is no evidence in the passage that this was the reason he was permitted to be buried in a Catholic cemetery.

Question 4 (Except)

The author of this passage was likely uninterested in which of the following aspects of Schrödinger's life:

A. His unconventional home life

- B. His dual nationality
- C. His work in quantum theory
- D. His relationship with religion

Correct Answer: C

Explanation

A is incorrect; this aspect of Schrödinger's life is detailed primarily in paragraph two, which deals with his unconventional ménage à trois living situation.

B is incorrect; his Austrian-Irish dual nationality is mentioned in paragraph one.

C is correct; the results of his work in quantum theory, though ground-breaking, are omitted from this passage.

D is incorrect; his religious background is detailed in paragraph one and touched on again in paragraph three.

Decision Making

Statement 1 (Syllogisms)

All of the birds in the cage are able to fly. Some of the birds in the cage are yellow, whilst some of them are blue. All red birds can fly, whilst all blue birds can sing. None of the orange birds can fly.

Place 'Yes' if the conclusion does follow. Place 'No' if the conclusion does not follow.

Question 1

Answer options:

- A. None of the birds in the cage are orange.
- B. All blue birds can fly.
- C. There are red birds in the cage.
- D. Some yellow birds can fly.
- E. Some of the birds in the cage can sing.

Correct Answers and Explanation

A. Yes - Orange birds are unable to fly and all birds in the cage can fly.

B. No– All of the blue birds in the cage can fly, but this doesn't mean that all blue birds outside of the cage can fly too.

C. No – This may be true, but we are not told that red birds are in the cage.

D. Yes - All of the birds in the cage can fly and some of the birds in the cage are yellow.

E. Yes – All blue birds can sing and some of the birds in the cage are blue.

Statement 2 (Venn Diagrams)

30 students were asked what they did at home during a lockdown. 20 students spent their time studying for the upcoming exams, 12 spent their time drawing, and 3 students learnt how to play a new instrument. 5 out of the 20 students who spent their time studying, drew too.

Question 1

Which of the following diagrams best represents the above data?



Correct Answer: D

Explanation

This is because only answers C and D show a total of 30 students. In A and B, there is a total of 40 and 35 students respectively. The number of students who spent time studying is 20, which means that C cannot be the answer as the number of students who did this is 21. The only solution is D as it has the right number of total students with the correct distribution among the activities.

Quantitative Reasoning

Statement 1

A new Ferris Wheel is being built, with a capacity to carry 96 passengers. There are 8 carriages are of equal size, shape and weight, and these are equally distributed around the circumference of the wheel.

The diagram for the new wheel can be seen to the right.

Area of circle = πr^2 Circumference of circle = $2\pi r$ π = 3.14 r = radius

Themes used: areas and volumes; height, weight and BMI; speed, distance and time



Question 1

When a carriage is at its highest point, it will be 119.5m above the ground. What is the area of 1/8th of the wheel?

A. 46.1m² B. 1,352m² C. 1,401m² D. 10,819m² E. 11,210m²

Correct Answer: B

Explanation

First find the radius of the wheel: 119.5 - 2.1 = 117.4

Radius: 117.4 / 2 = 58.7m

Find the area of the wheel, and then 1/8th of it, using the equation πr^2 :

(58.7)² x 3.14 = 10819m²

10820 / 8 = 1352.4m²

Skills used: Areas and volumes of shapes

Question 2

A larger Ferris wheel is made, of the same proportions, but with radius 66.9m. Jasmin boards a carriage and completes 2 full turns on the wheel in a time of 3mins 20s. Assuming the wheel rotated at a constant speed, how fast was Jasmin's carriage travelling?

A. 252 m/min B. 4.2 m/min C. 126 m/min D. 263 m/min E. 4.4 m/min

Correct Answer: A

Explanation

Begin by finding the circumference of the wheel using $2\pi r$: $2 \times 3.14 \times 66.9 = 420.1$

Jasmin made 2 full turns, hence the carriage travelled 2 x 420.1 = 840.2m

Find the speed of the carriage: 3mins 20s = 200 seconds

Speed = distance / time Speed = 840.2 / 200 = 4.201 m/s

The answers are in m/min, so convert speed to this form: $4.201 \ge 60 = 252 \text{ m/min}$

Skills used: Areas and volumes of shapes, Common functions, Unit conversion

Question 3

If the wheel and supporting beams constitute 56% of the total weight of the ride, and a single carriage weighs 8,800kg, how much would two Ferris Wheels weigh?

1 tonne = 1,000kg

A. 320 B. 70.4 C. 320,000 D. 140.8 E. 160

Correct Answer: A

Explanation

The carriages constitute 44% (100 – 56) of the total weight;

There are 8 carriages, and one weighs 8,800kg;

The combined weight of the carriages: 8 x 8800 = 70,400kg 70,400 = 44% 70,400 / 44 = 1% (70,400 / 44) x 100 = 100% 160,000 = 100%

2 Ferris wheels weigh: 2 x 160,000 = 320,000 320,000kg = 320,000/1,000 = 320 tonnes

Skills used: Common functions, Percentages, Unit conversion

Question 4

One ticket for a ride is $\pounds4.35/2$ people, and a 'ride' is 3 full rotations. If the Ferris Wheel is at 75% capacity for one ride, what is the profit in \pounds /rotation?

A. £69.60 / rotation B. £208.80 / rotation C. £156.60 / rotation D. £313.20 / rotation E. £52.20 / rotation

Correct Answer: ${\rm E}$

Explanation

Max capacity is 96 people, so 75% capacity is: 96 x 0.75 = 72 people

Ticket price is £4.35 / 2 people: 72 / 2 = 36 36 x 4.35 = £156.60

3 full rotations are made, hence profit is: 156.6 / 3 = £52.20/rotation

Skills used: Percentages, Rates

Statement 2

A trainline runs between the coast, Sandy Shore, and a major town, Trackendon, which is inland. Old Cobbles is a small village with a station on the line between Sandy Shore and Trackendon.

Themes used: speed, distance and time

Question 1

A train leaves Sandy Shore at 10:43 and arrives in Old Cobbles at 11:23. The train sits at Old Cobbles for exactly 19 minutes before leaving for Trackendon. For this part of the journey, the train travels at an average speed 99km/hr, 10% faster than its speed between Sandy Shore and Old Cobbles. If the train arrives in Trackendon at 13:57, how far is the journey from Sandy Shore to Trackendon?

Speed = distance / time

A. 282.8km B. 288.8km C. 314.1km D. 320.1km E. 386.1km

Correct Answer: A

Explanation

Work backwards through this problem and begin with the second half of the journey: Train leaves Old Cobbles at 11:42 after waiting 19min, and arrives at 13:57

13:57 – 11:42 = 2hr 15min = 2.25hr 99 km/hr = d / 2.25 99 x 2.25 = 222.75km

First half of the journey: Train leaves at 10:43 and arrives at 11:23 \rightarrow journey time 40min = 2/3 hr

99km/hr = 10% greater than original speed Call original speed V V x 1.1 = 99 V = 90 90 = d / (2/3) 90 x 2/3 = 60km 60 + 222.75 = 282.75km

Skills used: Areas and volumes of shapes



Abstract Reasoning



Set B



Which set does the test shape belong to?



A. Set A B. Set B C. Neither

Rule for Set A

The dark green circles of each box are always in between two lines. The white circles of each box are adjacent to one line only. The number of diamonds is equal to the number of intersections between lines in the other side of the box.

Rule for Set B

The dark green circles of each box are only adjacent to one line. The white circles of each box are always between two lines. The number of diamonds is equal to the number of lines in the other side of the box.

Correct Answer: Set A

Explanation

The dark green circle is in between two lines. The white circle is adjacent to one line only. The number of diamonds is equal to the number of intersections between the lines on the other side of the box.

Which set does the test shape belong to?



A. Set A B. Set B C. Neither

Rule for Set A

The dark green circles of each box are always in between two lines. The white circles of each box are adjacent to one line only. The number of diamonds is equal to the number of intersections between lines in the other side of the box.

Rule for Set B

The dark green circles of each box are only adjacent to one line. The white circles of each box are always between two lines. The number of diamonds is equal to the number of lines in the other side of the box.

Correct Answer: Neither

Explanation

The figure belongs to neither set. The white circle is adjacent to one line only which might suggest that it is in Set A. However, the number of diamonds is not equal to the number of intersections of the lines. Hence, it does not belong to either set.

Which set does the test shape belong to?



A. Set A B. Set B C. Neither

Rule for Set A

The dark green circles of each box are always in between two lines. The white circles of each box are adjacent to one line only. The number of diamonds is equal to the number of intersections between lines in the other side of the box.

Rule for Set B

The dark green circles of each box are only adjacent to one line. The white circles of each box are always between two lines. The number of diamonds is equal to the number of lines in the other side of the box.

Correct Answer: Neither

Explanation

The dark green circle and one of the white circles are both adjacent to only one line. This does not fit into either set

Which set does the test shape belong to?



A. Set A B. Set B C. Neither

Rule for Set A

The dark green circles of each box are always in between two lines. The white circles of each box are adjacent to one line only. The number of diamonds is equal to the number of intersections between lines in the other side of the box.

Rule for Set B

The dark green circles of each box are only adjacent to one line. The white circles of each box are always between two lines. The number of diamonds is equal to the number of lines in the other side of the box.

Correct Answer: Set B

Explanation

The white circles are in between two lines. The dark green circle is adjacent to one line only. The number of diamonds is equal to the number of lines in total in the other side of the box.

Which set does the test shape belong to?



A. Set A B. Set B C. Neither

Rule for Set A

The dark green circles of each box are always in between two lines. The white circles of each box are adjacent to one line only. The number of diamonds is equal to the number of intersections between lines in the other side of the box.

Rule for Set B

The dark green circles of each box are only adjacent to one line. The white circles of each box are always between two lines. The number of diamonds is equal to the number of lines in the other side of the box.

Correct Answer: Set A

Explanation

The dark green circle is between two lines. The white circles are adjacent to one line only. The number of diamonds is equal to the number of intersections between the lines.

Situational Judgment

Scenario 1

Ateeq is a 4th year medical student completing his surgical placement block. It is his final week in this block and he still has some clinical skills that need to be signed off for assessment purposes. Ateeq is unwell at the moment and feels unable to go to the hospital for his placement. However, he is aware that he needs to see patients and practice clinical skills on them, like taking their blood, in order to complete his placement successfully.

Question 1

Choose the one most appropriate action and the one least appropriate action that Ateeq should take in response to this situation.

- A. Attend his placement to complete his clinical skills
- B. Email his supervisor regarding the situation
- C. Stay at home and explain his situation to the medical school when asked

Correct Answers and Explanation

Most appropriate - Option B

This is the most appropriate answer as it allows Ateeq to explain his situation to the person in charge. It will also allow the supervisor to suggest a way in which Ateeq can complete his clinical skill practice, for example by coming into the ward at a later date. Illness cannot be avoided but it is important to explain your absence and catch up on missed work.

Least appropriate - Option A

This is very inappropriate as Ateeq is unwell and therefore should not attend a clinical setting. This poses a risk to both his colleagues and to the patients that he will be seeing.

Themes used: Professionalism, competency and training, providing care, promoting safety and quality, legalities

Scenario 2

Charlie is a 3rd year medical student. His year group has recently started going on placements and they are very excited about this. Charlie notices that his friend, Taylor, has posted a picture on her social media account of herself on placement. However, in the background of the photo patient information is legible. Other staff members can also be seen in the background. Charlie messages Taylor advising her to take the post down. However, Taylor states that Charlie is overreacting as her account is private.

How important to take into account are the following considerations for Charlie when deciding how to respond to the situation?

Suggest Response 1

Patient information can be seen in the photograph.

A. Very importantB. ImportantC. Of minor importanceD. Not important at all

Correct Answer: A

Explanation

This is a very important consideration. Taylor is breaking patient confidentiality by posting this information online, even if it wasn't intentional. Medical students are allowed to have social media accounts however breaking confidentiality in this manner is simply not acceptable.

Themes used: Professionalism, legalities, promoting safety and quality, records

Suggest Response 2 Taylor's account is private.

A. Very importantB. ImportantC. Of minor importanceD. Not important at all

Correct Answer: D

Explanation

This is not important at all. Even though the general public may not be able to view her account, Taylor's friends and family can still view the details. Taylor is not allowed to share this information with anyone and her followers could also share this image.

Themes used: Professionalism, legalities, communicating with colleagues, promoting safety and quality, records

Suggest Response 3

Taylor does not accept that she has made a mistake.

- A. Very important
- B. Important
- C. Of minor importance
- D. Not important at all

Correct Answer: B

Explanation

This is important as it indicates that Charlie may have to take more serious action against Taylor. Taylor may also need further education on confidentiality and hospital regulations. However, it is not very important, as it is not the most important issue at hand. The biggest priority at the moment is getting the photos taken down.

Themes used: Professionalism, legalities, communicating with colleagues, promoting safety and quality

Suggest Response 4

Whether people in the background of Taylor's image have given her permission to post the image.

A. Very importantB. ImportantC. Of minor importanceD. Not important at all

$\textbf{Correct Answer:} \ B$

Explanation

This is important as Taylor may also be compromising their privacy by posting images of them on social media when they may have not consented to this. However, it is not very important as even if they have given her permission, patient confidentiality is still being broken and therefore urgent action must be taken regardless.

Themes used: Professionalism, legalities, communicating with colleagues, promoting safety and quality

Suggest Response 5

There may be serious consequences to Taylor's actions.

- A. Very important
- B. Important
- C. Of minor importance
- D. Not important at all

Correct Answer: D

Explanation

Although Taylor is Charlie's friend, the actions that she has committed are wrong and put patient safety at risk. Therefore, it is important that Charlie takes appropriate action regardless of the consequences that Taylor may face.

Themes used: Professionalism, legalities, communicating with colleagues, promoting safety and quality