

(Key and Solutions for AIMCAT1701)

Key

SECTION – I
SUB-SECTION: RC

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

SUB-SECTION: VA

- | | | | |
|------|-----------|-----------|-----------|
| 1. C | 6. C | 11. 234 | 16. 35421 |
| 2. C | 7. C | 12. 245 | 17. C |
| 3. B | 8. 22211 | 13. 3 | 18. B |
| 4. C | 9. 22212 | 14. 32451 | 19. C |
| 5. D | 10. 11111 | 15. 42513 | |

SECTION – II
SUB-SECTION: DI

- | | | | | |
|-------|-------|------|-------|---------|
| 1. 68 | 4. 27 | 7. A | 10. 7 | 13. B |
| 2. C | 5. C | 8. C | 11. B | 14. 30 |
| 3. A | 6. B | 9. 4 | 12. 7 | 15. 100 |

SUB-SECTION: LR

- | | | | | |
|------|------|------|-------|-------|
| 1. C | 4. B | 7. B | 10. B | 13. C |
| 2. B | 5. C | 8. 0 | 11. D | 14. D |
| 3. C | 6. B | 9. 4 | 12. A | 15. C |

SECTION – III: QA

- | | | | |
|-------|---------|-----------|---------|
| 1. D | 9. B | 17. D | 25. C |
| 2. -1 | 10. C | 18. A | 26. 210 |
| 3. A | 11. 70 | 19. A | 27. 40 |
| 4. A | 12. 225 | 20. 254 | 28. B |
| 5. A | 13. B | 21. 10 | 29. D |
| 6. 1 | 14. 24 | 22. 25920 | 30. C |
| 7. 23 | 15. 8 | 23. A | |
| 8. 4 | 16. 600 | 24. C | |

Solutions

SECTION – I
SUB-SECTION: RC

Solutions for questions 1 to 6:

Number of words and Explanatory notes for RC:

Number of words: 589

- The author talks about a “big shot from an unpopular country – leader of an oil rich bit of the Middle East, say, or a tycoon from a grungy bit of the former Communist world.” Option A: The author states that “you don’t deserve it and won’t earn it:... out of the public purse”. We can infer from this that the author believes that the addressee is

unscrupulous and opportunistic (because he states that the big shot does not deserve a life in the richest and nicest parts of the world).

Option B: Since the author is talking about a big shot, we can infer that he leads an opulent lifestyle.

Option C: From the first and second paragraphs, we can understand that the big shot wants respectability. The author outlines a plan for the big shot to buy respectability. We can infer from this that the author will most probably not be welcome in elite social circles. Therefore, this is the correct answer.

Option D: Consider the statements “Next comes a virtuous circle of socializing and do-gooding”, “Donations there will get you known and liked”). From the tone of the author, we

can infer that the addressee is not concerned about altruism.

Hence, the correct answer is option C. It should be pointed out that the present tense running from the middle of the third para to the penultimate para is not to talk of how things are in the present, but what could hypothetically be. (Let's take the situation as it could be.) Choice (C)

2. The phrase means that dubious tycoons can buy foreign respectability by ingratiating themselves into influential social circles with the help of their ill-gotten wealth.

Option A: While we can infer from the passage that integrity is irrelevant for one's acceptability in high society, the phrase in the question does not refer to one's integrity.

Option B: The given phrase means that big shots can buy respectability. Therefore, we can say that respectability is available to tyrants at the right price.

Option C: The author does not refer to London in particular when he says that "Respectability is on sale".

Option D: While media does play a part for a big shot to buy respectability, the phrase does not imply this.

Hence, the correct answer is option B. Choice (B)

3. The said words (global, sustainable, strategic and ethical) are catchy platitudes that assure academic respectability.

Option A: The addressee wants to use these catchphrases (which are popular) to gain recognition in elite circles. Hence, this is the correct answer.

Option B: The author does not suggest that the addressee show genuine interest in contemporary issues. He only suggests that the addressee should choose a subject which sounds popular.

Option C: The author does not specify any subjects that the addressee should focus on.

Option D: The addressee is not interested in 'playing to the gallery' (winning popularity with the common man) but gaining recognition in elite circles. Hence, this is not the correct answer.

Therefore, the correct answer is option A.

Choice (A)

4. The author mentions that London is the "place to start" because London provides some advantages for anyone trying to buy respectability. The advantages that London provides for a big shot starting out are the "strict libel laws" and the "helpful banks, law firms, accountants..."

Option A: The author mentions the money hungry academia in London based universities but the addressee does not have to start the process in London to get their help.

Option B: The author advocates inviting British royals but does not talk about their preference for attending parties in London.

Option C: The strict libel laws is one of the reasons why the author suggests London as the place to start. The strict libel laws mean that "nosy journalists risk long, costly legal battles."

Hence, the answer is option C. Choice (C)

5. The author mentions at the beginning of the passage that the big shot from the unpopular country wishes his family "could shop, invest, socialize and study in the richest and nicest parts of the world."

Option A: The author outlines a plan for the big shot to become respectable. One of the steps in this plan is to become a politician. However, this is only a means to an end and not the end in itself.

Option B: The author mentions that this big shot (the addressee) wants to provide a better (and respectable) life for his family ("shop, invest, socialize and study in the richest and nicest parts of the world").

Option C: The author does not provide ways for earning money without tarnishing the addressee's reputation. He, in fact, provides ways in which the big shot can spend his money to buy respectability.

Option D: This is also a means to an end as this is not the primary question that is being answered in the passage.

Therefore, the correct answer is option B.

Choice (B)

6. Most rich countries make it hard (or illegal) for foreigners to give money to politicians or parties. But you can oil the wheels. A non-executive directorship can be a mind-changing experience. The idiom "oil the wheels" means to make it easier for something to happen.

(1): Pour oil on troubled waters means to do or say something in order to make people stop arguing and become calmer. (1) is not the meaning of the idiom "oil the wheels".

(2): "oil someone's palm or hand" means to do something or to give someone money in exchange for a favor; also, bribe someone. This would come closest to the idiom "oil the wheels" in the penultimate paragraph. Hence (2) is the answer.

(3): "Keep your fingers out of the public purse" appears in the first paragraph of the passage. It means not to divert or siphon off or utilize public money for your own benefit. (3) is not the meaning of the idiom "oil the wheels".

(4): "Squeaky wheel that gets the grease" is inapplicable in the given context. It means that the loudest complaints get the most attention. (4) is not correct.

(5): "The wheel has come full circle" is an idiom that means that the situation or circumstance has returned to its original or a similar state. (5) is not the answer.

(6): "Put one's shoulder to the wheel" means to work hard, make a strenuous effort. (6) does not apply.

Ans: (2)

Solutions for questions 7 to 9:

Number of words and Explanatory notes for RC:

Number of words: 450

7. Refer to the last para of the passage. One of Toffler's greatest achievements was inspiring the government to create an Office of Technology Assessment (OTA). One of Gingrich's first acts on winning control of the House of Representatives in 1995 was defunding the OTA as an example of useless government extravagance. Still, there's no contradiction here.

Option A: By 1990, Toffler was the personal intellectual guru to Republican congressman Newt Gingrich, who claimed that his 1994 "Contract With America" was inspired, in part, by the understanding that the United States needed to move from an antiquated, materialist, industrial mind-set to a new, free-market, information age, Third Wave civilization. Choice A may be true but does not help explain the contradiction mentioned in the question.

Option B: By this time, Toffler had long since given up on influencing policy by appealing to the general public. This makes choice B the answer.

Option C: The irony in the context is that though Gingrich called Toffler his guru, Gingrich got rid of the OTA. There is not much in the passage to say that Gingrich called Toffler's bluff. Choice C cannot be inferred from the passage.

Option D: Toffler was making a living largely by giving seminars to CEOs and corporate think tanks. This has been mentioned in the last sentence of the passage. But choice D is out of context and is not related to the contradiction mentioned in the question.

Choice (B)

8. Refer to the first paragraph. In Future Shock, Toffler argues that the exponential rate of technological change must be controlled lest it becomes socially disruptive.

Option A: Choice A is an argument in The Third Wave. The United States needed to move from an antiquated, materialist, industrial mind-set to a new, free-market, information age, Third Wave civilization. Hence choice A is not the answer.

Option B: The only solution, Toffler argued, was to begin some kind of control over the process, to create institutions that would assess emerging technologies and their likely effects, to ban technologies likely to be too socially disruptive, and to guide development in the direction of social harmony. Also refer to the first sentence of para 2: "Humans were not psychologically prepared for the pace of change". Hence choice B is the answer.

Option C: Choice C is unlikely. Toffler only argued that some kind of control over the "accelerative thrust" was required i.e. there was a need to create institutions that would assess emerging technologies and their likely effects. We cannot infer that emerging technologies proved most conducive to social control.

Option D: Choice D is out of scope of the given passage.
Choice (B)

9. Refer to the penultimate paragraph where The Third Wave has been mentioned.

Option A: The passage mentions a "new, free market, information age" as the future. While Mandel thought the new technological revolutionary changes would spell the end of capitalism, Toffler assumed capitalism was eternal. Hence choice A is incorrect.

Option B: The argument of The Third Wave was lifted from Ernest Mandel's "third technological revolution". But choice B cannot be inferred from the passage.

Option C: There would be a move from an antiquated, materialist, industrial mind-set to a new, free-market, information age, Third Wave civilization. But "imaginings would once again become a material force" cannot be gathered from the last few paras of the passage. So choice C is not true.

Option D: By 1990, Toffler was the personal intellectual guru to Republican congressman Newt Gingrich, who claimed that his 1994 "Contract With America" was inspired, in part, by the understanding that the United States needed to move from an antiquated, materialist, industrial mind-set to a new, free-market, information age, Third Wave civilization. Hence choice D is the correct answer.
Choice (D)

Solutions for questions 10 to 12:

Number of words and Explanatory notes for RC:

Number of words: 386

10. Refer to the last para of the passage.

Option A: Choice A is of limited help to America and is not the most appropriate step to tackle the illicit drug trade.

Option B: The concluding para makes it clear that "..... unless and until drugs are legalized", "the fundamental problem" will not be solved. Hence choice B is correct.

Option C: As long as drugs that people want to consume are prohibited, and therefore provided by criminals, driving the trade out of one bloodstained area will only push it into some other godforsaken place. The passage does not say that consumers should be penalized. "only if" in choice C makes this choice extreme.

Option D: Choice D can be ruled out as it is inconclusive and does not reveal a course of action or a step to be taken to tackle the illicit drug trade.
Choice (B)

11. Statement 1: Nothing has been mentioned about "natural disasters" in the passage. So statement 1 (Addressed on a war footing) is premature and extreme in scope. Statement 1 is not true.

Statement 2: It is time Americans remembered Central America again, and offered some help. They could, for example, lead an aid programme that would tie money for roads, ports and security hardware to increases in the tax take to pay for better security and social conditions. So statement 2 is relevant.

Statement 3: Driving the trade out of one bloodstained area will only push it into some other godforsaken place. So statement 3 is not correct.

Statement 4: Yet it is in Central America that democracy is under greatest threat. Central American governments have begun to recognise the scale of the battle they face. But stopping their slide into violent chaos requires many things (the rudiments of a modern state): reform of the police, prisons and courts; better intelligence and information-sharing; a huge effort to provide more legal opportunities for young men, not least by educating them properly; and more hardware, such as helicopters and patrol boats. Hence statement 4 is relevant.

Ans: (24)

12. Refer to para 2.

Option A: The passage mentions that it is "wrong to leave Central America to its own unhappy devices" since the "origins" of the violence lie in the United States. Demand for cocaine in the United States (which, unlike that in Europe, is fed through Central America), combined with the ultimately futile war on drugs, has led to the upsurge in violence. It is American consumers who are financing the drug gangs and, to a large extent, American gun merchants who are arming them. Hence choice A is correct.

Option B: Choice B has not been mentioned in the passage.

Option C: Choice C is misleading and is not the answer for the question. It has been mentioned in the last para that as long as drugs that people want to consume are prohibited, and therefore provided by criminals, driving the trade out of one bloodstained area will only push it into some other godforsaken place. This would not be a reason for leaving Central America to its own devices. Hence choice C is not the answer.

Option D: "only means of sustenance" as given in choice D cannot be inferred from the passage.
Choice (A)

Solutions for questions 13 to 15:

Number of words and Explanatory notes for RC:

Number of words: 449

13. The penultimate para mentions that the characteristics that made 'her' ripe for conversion to messianic sect.

Option (A) can be ruled out as 'inclined to revolt' is not mentioned in the passage.

Option (B) can be ruled out because of the expression 'innocent' as only passionate youngsters are prone to conversion.

Option (C) is correct, as 'conversion to fancy religion' is religious experimentation. The last sentence of the passage refers to this and renders this option correct. Option (D) is incorrect.
Choice (C)

14. The latter part of the A – 'lack of trust' – is incorrect.

In option B, 'with imperious control' renders it inapt.

In option C, the latter part 'adherence' to authority renders it incorrect.

Option D is correct as the third sentence in para 2 refers to "she cannot conceive of a life.....birthright."
Choice (D)

15. The author mentions that Anna is ripe for conversion to an apocalyptic, messianic sect if "she were at all inclined to bow her back to authority" and if "she didn't have [the author's] childhood as an example of the perils thereof".

Statement I: The author mentions that she is a "teleological child". But the author mentions this as one of the reasons why she thinks that Anna is "prone to conversion to fancy religions".

Statement II: The author states, "if she didn't have my childhood as an example of the perils thereof", she would convert. Anna's knowledge about the author's childhood is one of the reasons why she would probably not convert to "apocalyptic, messianic sect".

Statement III: The author says that "if she were at all inclined to bow her back to authority", she would have made a ripe candidate. From this we can infer that the author believes that Anna does not submit to authority.

Statement IV: From the passage, we can infer that Anna believes in only "one's own nature and volition". However, this is a reason why the author believes that Anna will be prone to conversion as the author mentions that people with such behaviour are prone to conversion. While it has been mentioned in para 2 that Anna did not like the fact that approval had to be bought, nowhere in the passage does the author say or hint that Anna does not care about the approval

Hence, only statements II and III are correct.

Choice (D)

Solutions for questions 16 to 21:

Number of words and Explanatory notes for RC:

Number of words: 754

16. The author talks about Beamish and Aristotle and their definitions of fear in the third paragraph of the passage.

Option A: According to Beamish, "Fear," Beamish went on to say, 'is perfectly natural. It comes to all people' From this we can infer that Beamish does not consider anyone who is afraid to be a coward. He only considers those who are "conquered by fear" to be cowards. Hence, this is not the correct answer.

Option B: Aristotle mentions that "the Celts do not fear an earthquake or flood, and we are right to think them crazy". He clearly separated fears that are conquerable and those that are not. According to him, a coward is one "who exceeds in fear". Hence, Aristotle differentiated between conquerable and unconquerable fears but Beamish did not. Hence, this is the correct answer.

Option C: According to Aristotle, the Celts, who do not fear earthquake or flood can be considered crazy. But he does not say that cowards are crazy. Hence, this is not the correct answer.

Option D: The passage mentions the difference between Beamish's definition and Aristotle's definition of cowardice and hence, this option is incorrect.

Therefore, the correct answer is option B. Choice (B)

17. Beamish is an advocate for death penalty for cowardice and desertion. He will most probably agree with any statement that supports this viewpoint.

Option A: Beamish would most probably agree with this statement. This would call for strict punishments for cowards and having no tolerance towards cowardice. Since this would most likely support his view regarding death penalty for cowards, he would agree with this.

Option B: Beamish would not agree with this statement because this would mean that he was willing to "judge the men who had failed with a much deeper sympathy and understanding". However, we can infer from the passage that this is not true.

Option C: According to Homer, "the coward can sow panic simply by the way he looks – changing colour". However, we cannot infer from the passage whether Beamish would agree with this.

Option D: This would be an argument for understanding more about cowardice and Beamish would most probably not agree with this. Hence, this is not the correct answer.

Therefore, the correct answer is option A. Choice (A)

18. The statement mentioned in the question is in the fifth paragraph of the passage. It was made in the context of employing humiliation as a punishment for cowardice.

Option A: The statement does not mean that being a coward is shameful in itself. The "blood rush to a man's face" refers to shaming the man and "flow from his body" refers to killing him. This option does not capture what is being conveyed in this statement and is not the correct answer.

Option B: The first statement of the paragraph mentions that "Humiliation is a much more usual punishment for cowardice". However, the statement mentions that humiliation is better than death. This is because "a coward who is allowed to live might be shamed into fighting courageously". The statement does not talk about the occurrence of the death penalty as opposed to humiliation. Hence, this is not the correct answer.

Option C: The statement does not mean that as a punishment, humiliation is worse than death. It says that humiliation is better because it allows for the cowards to later fight courageously. Hence, this is not the correct answer.

Option D: The statement compares humiliation and punishment and says that humiliation is better. This is not because "a coward who is allowed to live might be shamed

into fighting courageously". Hence, this is the correct answer.

19. The passage talks about various psychological disorders associated with modern warfare in the last paragraph of the passage.

Option A: The passage mentions that shell shock was a psychological disorder and so are many other disorders associated with war. However, the passage also states that "soldiers thus diagnosed were actually cowards". Hence, we cannot conclude that cowardice was being referred to by various terms. Therefore, this is not the correct answer.

Option B: According to the passage, cowardice was differentiated from other psychological disorders like shell shock, war neurosis etc. Because of this recognition, these disorders, which were previously considered cowardice, were now considered illnesses. However, we cannot say that cowardice itself is considered an illness. Hence, this is not the correct answer.

Option C: The passage states that "misconduct that previously would have been considered to reflect a defect in character or a corruption of gender identity was now more likely to be seen as a sign of illness". The "defect in character or corruption of gender identity" refers to cowardice. Hence, the misconduct that would have been considered cowardice was now considered as illness. From this we can infer that the psychological disorders that are recognized now would have been considered cowardice in older times. Hence, this is the correct answer.

Option D: The passage does mention that powerful explosives were thought to be responsible for shell shock. However, it does not mention that the explosives were responsible for cowardice. Hence, this is not the correct answer.

Therefore, the correct answer is option C. Choice (C)

20. The "shift" mentioned in the seventh paragraph is discussed in the previous paragraph. The first sentence of the sixth paragraph talks about how "we have become less willing to condemn or punish cowardice with the passing years" and provides a few examples supporting this claim.

Option A: The shift refers to how we have become lenient in punishing cowardice or desertion. It provides two examples, one of which is the Parliament abolishing "the death penalty for cowardice and desertion in April, 1930". It also talks about US, where "desertion remains punishable by death during wartime". Hence, the shift does not refer to abolition of death penalty for cowardice or desertion.

Option B: The shift refers to how "we have become less willing to condemn or punish cowardice with the passing years" and hence, this is the correct answer.

Option C: Using humiliation as a punishment is discussed in the fourth paragraph and is not related to this context. Hence, this is not the correct answer.

Option D: The passage does not talk about the change in the way cowardice is defined in this paragraph. It talks about the change in way cowardice is perceived in the last paragraph of the passage. Hence, this is not related to the "shift" mentioned in this paragraph.

Therefore, the correct answer is option B. Choice (B)

21. The passage talks about the views of various persons regarding death penalty for cowardice or desertion.

We cannot infer from the passage whether Homer and Aristotle support death penalty for cowardice or desertion. Ernest Thurtle "campaigned to abolish the death penalty for military crimes" and hence, he would not support death penalty for cowardice. Montaigne also mentions that humiliation is better than death penalty. Hence, he would also not support death penalty for cowardice. Tufton Beamish, on the other hand, was an advocate for death penalty and would definitely support it.

Therefore, exactly two persons will definitely not support death penalty for cowardice. Choice (B)

Difficulty level wise summary - Section I	
Sub Section: RC	
Level of Difficulty	Questions
Very Easy	2
Easy	-
Medium	3, 4, 5, 7, 8, 10, 11, 12, 13, 17, 20
Difficult	1, 6, 9, 14, 15, 16, 18, 19, 21
Very Difficult	-

SUB-SECTION: VA

Solutions for questions 1 to 4:

1. The para explains the difference between or contrasts the activities of writing a novel and of reviewing books. The author says that critiquing a book is an activity less noble than the writing of a book. The penultimate sentence states that "The critic is in a worse position...." So the ideal conclusion sentence for this para would be a simple conclusion of the comparison between a writer and a critic. Choice C is the answer. Choice D would need elaboration or expansion (creative liberty, and at the same time - How to wed two opposing spirits) and so it cannot conclude the para. Statement 'B' would also need elaboration as it is not a conclusive statement and there is more to follow after it. Also there is nothing to indicate "these simplifications" in the paragraph. Choice (A) is not relevant to the theme of the para. Choice (C)

2. The paragraph defines the nature of thoughts and says that though thoughts are without shape, smell, weight or other physical feature, they are still held down or underpinned by or related to physical stuff. The physical brain can change the kinds of thoughts one thinks even though thoughts on their own do not have any feature. It then explains how our thoughts change during different times of the day or night, during different phases of activity and rest. During the transition into deep sleep, there are bizarre thoughts and there are no thoughts during the phase of deep sleep. So choice C which correlates the state of the physical material and the state of the thoughts is an apt conclusion to the para. It extends the idea given in the penultimate sentence of the paragraph. Sentence A brings in the new gamut of consciousness which is not what the para discusses. Also "massive engineering underfoot" in sentence A needs explanation. Sentence B goes into process details. It is very specific and talks about the function of neurons which are part of the brain. Sentence D gain moves away from thoughts and talks specifically about the overarching responsibilities of the brain. Sentences A, B and D can all be a part of separate paragraphs. Choice (C)

3. "to produce an electronic ink" in the penultimate sentence of para 1 continues with "The ink could then be used to print electronic devices directly" as given in choice B. Choice B serves as a perfect sentence connecting the two paragraphs. "Printing with "chips as ink"" in para 2 further continues the idea.

Choice A cannot complete the blank. It can serve as an introduction sentence of a para much earlier in the flow. In fact, it could be the starting sentence of the first paragraph of this article.

Choice C cannot complete the blank. There is no reference to size in the sentences preceding the blank. So to say "Making things this small" would be incorrect.

Choice D cannot complete the first para of the passage. It can serve as an introductory sentence of the paragraph immediately following the second paragraph in this question. It leaves the thoughtflow incomplete.

Choice (B)

4. The paragraph makes an attempt in stating that online writing belongs to the "commentary" rather than "literature" family. He then explains through various examples the difference between "commentary" and "literature". Commentary is secondary and not primary, it has a

secondary status to whatever primary object is commented on. So the analogy of the primary object and the secondary status that highlights the difference between "commentary" and "literature" is best explained by choice C. The other choices do not exploit the said difference between literature and commentary and run tangent to the thought flow even though it seems that they express the point of difference between the two. In choice A, the difference of 'primary' and 'secondary' status appears to be shown (effect of a chisel on a marble stone) but the earlier part of the sentence (the differenceis a matter of perception) is not congruent with the thought that there is a marked difference between the two, (not to disdain commentary for its failure, suggest its difference from literature....). Choices B and D again do not bring out the said difference.

Choice (C)

Solutions for questions 5 to 7:

5. Upon reading the passage, we realize that the first blank is to be filled by a word that is related to the 'postponement of things'. 'inured' means 'to habituate to something undesirable, especially by prolonged subjection; to accustom'. 'temporised' means 'to act evasively in order to gain time, avoid argument, or postpone a decision or to engage in discussions or negotiations, especially so as to achieve a compromise or gain time.' 'predisposed' means 'to make (someone) inclined to something in advance or to make susceptible or liable'. 'prevarication' means 'to stray from or evade the truth; equivocate'. 'procrastination' refers 'to put off doing something, especially out of habitual carelessness or laziness'.

In the given context, 'temporizing' is inappropriate and 'prevarication' cannot fit the first blank. Also 'inured' does not work for the second blank. 'postponement' would imply 'deciding to delay a task and do it at a later time' (The deadline is changed). 'procrastination' would mean 'not deciding at all' or 'to put off intentionally or needlessly the doing of something that should be done, especially out of habitual carelessness or laziness.'

Choice (D)

6. 'Dogmatic' means accepting beliefs without arguments, without considering evidence or lack thereof. 'Plangent' means expressing sadness. 'Iconoclastic' means critical of popular beliefs and established customs without taking into account their relevance. So the first blank needs a word to go with 'reject religious claims.' So 'dogmatic' is the best word to fill this blank. 'Iconoclastic' and 'plangent' are contextually inappropriate.

The second blank needs to be filled by a word that is, in a sense, antonymous to 'dogmatic'. To 'reject claims apriori' means to use just the information available at hand to come to a conclusion, without conducting experiments or seeking more facts. 'a fortiori' (meaning, with an even stronger reason), 'ad hominem' (meaning, directed against a person's character rather than his argument) and 'ad finem' (to the end) are contextually inappropriate.

Choice (C)

7. The meaning of 'tout' is to present something so as to convince someone of the benefits of a situation/thing. 'Resurgence' is the answer for the second blank because they are talking about a 'renaissance' or a 'revival'. The other choices are incorrect for the second blank. So (touted, resurgence) is the correct pair.

Choice (C)

Solutions for questions 8 to 10:

8. The correct word in the first sentence is 'regroup' which means to return to the normal state after an unpleasant experience or a period of difficulty and become ready to make an effort again with new enthusiasm. Reorganize means to change the way in which something is organized or done. Hence 2.

Disinterested means impartial or unbiased. *Uninterested* means having no interest or liking. A judge needs to be disinterested. But 'disinterest' certainly wouldn't be a reason

for his refusal. He would have refused since there was nothing in the case that was of interest. Therefore 'uninterested'. Hence 2.

Unexceptional means ordinary; unexceptionable, which means without blemish or beyond criticism, is the correct word for the third sentence. Hence 2.

Pillory means to criticize somebody strongly in public. 'pillage' means to steal things from a place or region, especially in a war, using violence. The former is more appropriate. Hence 1.

Ostentatious means expensive or noticeable in a way that is intended to impress people, while ostensible is something which seems or is stated to be real or true, when this is perhaps not the case. Only the former fits in the given context. Hence 1.

Ans: (22211)

9. The word 'catachrestic' is inapt here. It means the misapprehension of a word or phrase. Cataclysmic, which means 'disastrous' is apt. so, 2.

Accentuate is to make something prominent or noticeable. When something leads to or results in a particular activity, we say it actuates or eventuates in. So 2 is correct.

Diffuse is to spread over a wide area. Defuse is to reduce the danger or tension. So 2 is correct.

Factitious is fake or contrived. Facetious is the use of inappropriate humour or being flippant. Here, 1 is suitable. Behaviour which is brazen or rude is presumptuous. But presumptive which means based on presumption will not work here. It means making a reasonable guess based on facts or evidence. Preposterous is ridiculous or absurd. So, 2.

Ans: (22212)

10. Origami is the craft of folding paper to make models of animals, people and objects. An orifice is a hole or opening in the body such as the mouth. Hence 1 is correct.

An ordinance is an official rule or order. An ordnance refers to military supplies especially weapons. Hence 1 is the correct option.

Reliable means that which can be trusted whereas, reliant means that a person or thing needs something and often cannot live or work without it. Hence 1 is the correct option. Remnants are things that are leftover when most of it has been sold. Remains are the parts left after the main thing has been destroyed. Hence 1 is correct.

Spectre refers to something unpleasant that might occur. Sceptre is an ornamental rod that a king or queen carries on ceremonial occasions. Hence 1 is correct.

Hence 11111.

Ans: (11111)

Solutions for questions 11 to 13:

11. The word 'incendiary' has been spelt incorrectly in part (1). The possessive pronoun 'its' does not take the apostrophe in part 5. There is no error in part (4).

Parts (4) and (5) have two separate ideas about the same bomb: (a) What happens when the water hit the white-hot metal and (b) what the incendiary bomb was doing itself.

These two ideas need to be separated by a semi-colon as given and not a comma at the end of line 4. A comma would wrongly indicate that it is a continuation of the same thought. So the part correctly reads:

..... hissing and sputtering when the water hit the white-hot metal; meanwhile, the

We could also use a conjunction 'and' to separate the two ideas. The 'and' needs to be followed by a comma. The part could also read:when the water hit the white-hot metal, and, meanwhile, the bomb was melting

Hence there is no error in part (4).

Note: We do not normally use the indefinite article 'a' with 'hissing' and 'sputtering' as these are abstract ideas. However here we are identifying with a type. So when abstracts become a type, they become countable and the indefinite article 'a' can be used.

Parts 2, 3 and 4 are free of errors.

Ans: (234)

12. In sentence 1, use of 'the' before 'early age' is incorrect as early age is a general term. If a particular age was mentioned (as in the early age of), the use of 'the' would have been apt. So 'an' is apt before early age. Sentence 2

is correct. In sentence 3, the author states that coarse people or touts do not deserve a complex anatomical equipment like the human body. They have bad habits and are responsible for shallow judgements and do not add any value to the world. Consumption is their only function. In sentence 3, the 'so.....as' construction is apt. Thus 'as' is to be used in place of 'than' (and the sentence should read '.....did not deserve so beautiful an instrument and such a complex anatomical equipment as the human body'). Though 'equipment' is uncountable, here 'a equipment' is an appropriate use of the indefinite article. This is because 'equipment' is used in the secondary sense to mean 'a piece of equipment'. Sentence 4 is correct, here the author uses the analogy of the alimentary canal to describe coarse people. It connects with the previous sentence of the para. The author says that coarse people who do nothing much in life should merely have a sack for the digestive process and nothing more. They do not deserve a beautiful and complex body. Actually, there isn't a problem with statement 5. It depends on what one wants to say:

- i) Very fond of animals, he was himself a vegetarian – here the first part is an adjectival phrase describing 'he' and is merely a piece of additional information, not a reason.
ii) Being very fond of animals, he was himself a vegetarian – here the first part is an adverbial phrase modifying 'was a vegetarian' by providing the reason. (It is not a description of the person....) So, 2 4 and 5 are correct.

Ans: (245)

13. The correction required in 1 is that the preposition 'in' can be omitted. It should be 'mood pervades Kabul's legal world'. In 2 the word 'into' has to be replaced by 'onto'. Part (3) is correct. In 4 the correction is 'spread over' and not 'spread on about' and in 5 the word 'through' can be omitted.

Ans: (3)

Solution for questions 14 to 16:

14. '32' is a mandatory pair. These statements talk about the relevance of bureaucratic hierarchy. The statements 451 form another group of statements highlighting the importance of automation and stressing that bureaucracy can be done away with. Statement 3 with the starter 'It will be a long time' introduces the paragraph. The reason for the claim made in statement 3 is given in statement 2. The 'tasks' mentioned in statement 2 is further elaborated by '....such tasks....' in statement 4. Statement 5 ('....many such tasks....') furthers the thought that machines are better and again brings in the fact that bureaucracy (introduced earlier in sentence 3) can be done away with. Statement 1 concludes the paragraph. The correct sequence is 32451.

Ans: (32451)

15. It can be noticed that '42' is a mandatory pair. Statement 2 ('...this inspired conscience.....') cannot start the paragraph as it needs explanation. Statement 3 is one that can either start or end the paragraph. Statement 4 has to come before statement 1 as the term 'correct principles' is defined in Statement 1. Also, since sentence 4 introduced God (as "God, the creator and Father of us all"), it has to begin the paragraph. The idea 'source of conscience' in sentence 4 gets extended in sentence 2 ('....live by this inspired conscience....') Statements 5 and 1 follow next in sequence as they refer to 'perfection' and 'aligning ourselves with correct principles'. Statement 5 reiterates the fact that the power of God is required. Statement 1 also refers to an end result (fulfill the measure of our creation). So, the idea that there are things man cannot realize (thus leaving him on the animal plane) in 2 continues to the thought in 5 that he needs God's help to realize these things, and then on to 'a' where with this help man achieves his purpose. Statement 3 concludes by describing the crux of the matter in quotes. So 42513.

Ans: (42513)

16. Sentence 3 begins the para by introducing the topic of dental Xrays. 5 follows 3 by referring to what else is done by the dentist. 4 follows 5 'brain' is the only organ not

draped by the apron. 2 and 1 go together since they refer to Dr Claus and 2 precedes 1 since it has the full name. The sequence is 35421.
Ans: (35421)

Solutions for questions 17 to 19:

17. The original pair of words bear an antonymous relationship. Decode (convert a coded message) into understandable language is the antonym of encrypt (convert into code). Similarly confound (confuse) and elucidate (clarify) are antonyms. The remaining options are inappropriate because the words obfuscate (make unclear) and confuse, enunciate (pronounce clearly) and explicate (explain), conform (agree) and affirm (declare) are not antonyms.
Choice (C)

18. Information is disseminated, ordinance is promulgated. Confidence is instilled but not inculcated, habits are inculcated. Hence option C is incorrect. The words obsession and fixation do not exhibit an analogous relationship with the original pair. Wealth may be dissipated. But between A and B only the latter bears a closest relationship with the original pair.

Choice (B)

19. Drizzle is light rain whereas deluge is a sudden very heavy rain fall. Similarly zephyr is a gentle breeze and cyclone is strong wind. All the given words are related to weather. Gale and Hurricane are both strong winds, as are squall and tornado. Avalanche refers to a mass of snow that falls down the side of a mountain whereas blizzard is a snowstorm. Sleet is a mixture of rain and snow.

Choice (C)

Difficulty level wise summary - Section I	
Sub Section: VA	
Level of Difficulty	Questions
Very Easy	-
Easy	-
Medium	1, 2, 3, 4, 8, 10, 11, 12, 13
Difficult	5, 6, 7, 9, 16, 17, 18, 19
Very Difficult	14, 15

SUB-SECTION: DI

Solutions for questions 1 to 4:

The number of rounds played in any tournament is 7. The number of matches won and lost in each tournament is given below for each year in the period 2000 - 12.

W - Win L - Loss

Year	Australian Open W - L	French Open W - L	Wimbledon W - L	U.S. Open W - L	W - L for the year
2000	2 - 1	3 - 1	0 - 1	2 - 1	
2001	2 - 1	4 - 1	4 - 1	3 - 1	
2002	3 - 1	0 - 1	0 - 1	3 - 1	
2003	3 - 1	0 - 1	7 - 0	3 - 1	
2004	7 - 0	2 - 1	7 - 0	7 - 0	
2005	5 - 1	5 - 1	7 - 0	7 - 0	
2006	7 - 0	6 - 1	7 - 0	7 - 0	
2007	7 - 0	6 - 1	7 - 0	7 - 0	
2008	5 - 1	6 - 1	6 - 1	7 - 0	
2009	6 - 1	7 - 0	7 - 0	6 - 1	
2010	7 - 0	4 - 1	4 - 1	5 - 1	
2011	5 - 1	6 - 1	4 - 1	5 - 1	20 - 4
2012	5 - 1	5 - 1	7 - 0	6 - 1	
Total	64 - 9	54 - 12	67 - 6	68 - 8	

1. Federer won the maximum number of matches (i.e., 68) in U.S Open. Since he could have played against different players every year, he could have won against 68 players in U.S Open in the given period.
Ans: (68)

2. Win % in Australian Open = $\frac{64}{73} \times 100 = 87.67\%$

In French Open = $\frac{54}{66} \times 100 = 81.82\%$

In Wimbledon = $\frac{67}{73} \times 100 = 91.78\%$

In U.S. Open = $\frac{68}{76} \times 100 = 89.47\%$

∴ The highest win % is 91.78%
Choice (C)

3. The win % for the required years are:

2005 : $\frac{24}{26} \approx 92.31$

2011 : $\frac{20}{24} \approx 83.33\%$

The required difference = $92.31 - 83.33 = 8.98\%$ points
Choice (A)

4. From the table it can be observed that Federer's longest winning streak in grand slam matches occurred in two periods: 2005-06 and 2006-07. That is, W, W, W and F.
∴ Maximum number of consecutive matches won
 $= 7 + 7 + 7 + 6 = 27$.
Ans: (27)

Solutions for questions 5 to 8:

In the line graphs, the Government Expenditure is not given. Government Expenditure can be calculated using the formula $GDP - C - I - X + M$.

The value of $GDP - C$ can be obtained from the first line graph and the value of $M - I - X$ can be obtained from the second line graph. The following table presents these values for the given years:

Year	GDP	C	I	X	M	$G = GDP - C - I - X + M$
2008	15000	11000	1500	1500	1800	2800
2009	17300	12000	1800	2000	2000	3500
2010	19900	15000	2100	1500	900	2200
2011	18100	13000	2000	2200	1100	2000
2012	18000	14000	1900	3100	2500	1500
2013	17500	10000	3400	5000	3400	2500
2014	16600	12500	3100	2000	2800	1800
2015	22000	18000	2800	3000	3700	1900

5. In 2012 and 2015, Government Spending as a percentage of GDP is lower than 10%.

$$\text{Required percentage in 2012} = \frac{1500}{18000} = 8.33\%$$

$$\text{Required percentage in 2015} = \frac{1900}{22000} = 8.63\%$$

Hence, the percentage is lowest in 2012.

Choice (C)

6. Exports were less than Government Spending in 3 years, 2008, 2009 and 2010.

Choice (B)

7. By observation, we can see that the percentage can be the highest in 2008 or 2009 or 2013.

$$\text{Required percentage in 2008} = \frac{2800}{11000} = 25.45\%$$

$$\text{Required percentage in 2009} = \frac{3500}{12000} = 29.17\%$$

$$\text{Required percentage in 2013} = \frac{2500}{10000} = 25\%$$

Hence, the answer is 29%.

Choice (A)

8. The highest Government Spending in any year was approximately \$3500 bn.

Choice (C)

Solutions for questions 9 to 12:

9. The employees who are at least 30 years are D, E, G, H, I, J, K and L.

Of these employees, the employees who have 20 months of work experience are D, E, G, H, I, K and L.

Of these employees, the employees whose salaries are at most. ₹30000 are D, E, H and I.

Hence, 4 employees satisfy all the conditions.

Ans: (4)

10. By observation, we can see that A, B, C, D and E satisfy the given condition. For F, the monthly salary is 35 and the work experience must be at least $35 \times 1.25 = 43.75$. But his work experience is around 41. Hence, F does not satisfy the condition. Similarly, G also does not satisfy the given condition.

I, J, K, L, M and N also do not satisfy. Hence, only seven persons, A, B, C, D, E, H and O, satisfy the given condition.

Ans: (7)

11. For D, required ratio = $\frac{51}{35} = 1.457$

$$\text{For E, the required ratio} = \frac{54}{36} = 1.5$$

$$\text{For G, the required ratio} = \frac{35}{24} = 1.458$$

$$\text{For K, the required ratio} = \frac{52}{36} = 1.44$$

Hence, the ratio is the highest for E.

Choice (B)

12. The value of Monthly Salary \times Work Experience must be greater than $20 \times$ the age of an employee.

Monthly Salary \times Work Experience for the employees A through O are 375, 448, 434, 350, 900, 1435, 1296, 840, 546, 435, 1332, 798, 918, 624, 1014 respectively.

The values of $20 \times$ age for the fifteen employees are 460, 480, 540, 1020, 1080, 520, 700, 820, 920, 1080, 1040, 1020, 560, 580, 480.

Hence, the given condition is satisfied for seven persons, F, G, H, K, M, N and O.

Ans: (7)

Solutions for questions 13 to 15:

13. Given $H = 2 \Rightarrow A = 5, B = 9, C = 19, D = 3$, and $E = 4$
 $A = 5 \Rightarrow F = 9, G = 13, I = 17$ and $J = 19$

From above, we can see two twin pairs B & F and C & J
 Choice (B)

14. The value of money with each of A, B, C, D and E can be maximized by minimizing the amount of money with each of F, G, H, I and J.

We can see that in each column the row corresponding to H has the lowest value \Rightarrow Among F, G, H, I, J the lowest amount of money is with H \Rightarrow the maximum possible amount of money with B is ₹10 and C is ₹ 20.
 Thus, the required amount = 10 + 20 = ₹30

Ans: (30)

15. As each person is paired with five persons in the table, the sum of all the values in the table will be 5 times the amount of money with all the persons put together
 $\Rightarrow 5 \times$ total amount = 500
 \Rightarrow Amount of money with all the persons put together = ₹100.

Ans: (100)

Difficulty level wise summary - Section II	
Sub Section: DI	
Level of Difficulty	Questions
Very Easy	9
Easy	1, 10, 11, 12
Medium	2, 3, 4, 5, 6, 7, 8, 13, 14, 15
Difficult	-
Very Difficult	-

SUB-SECTION: LR

Solutions for questions 1 to 4:

Let the order of the persons based on their heights is as follows.

1 2 3 4 5 6 7 8

Here, 1 represents the shortest and 8 represents the tallest.

From (i), we get

1 2 3 4 B 6 A 8

From (iii), H is taller than G but shorter than B. Also from (iv), C is shorter than G but taller than F. Hence, we get

F C G H B 6 A 8

Also, D is shorter than A. Hence, E must be the tallest.

The final order must be as follows.

\Rightarrow F C G H B D A E

Given, B and E are from 2nd standard. Also C is not from 3rd standard and neither the shortest nor the 2nd shortest (i.e., F and C) is from 1st standard.

\Rightarrow C is also from 2nd standard. As three are from 1st standard and two are from 3rd standard F and A are from 3rd standard (as they are not from 1st standard) and D, G and H are from 1st standard.

- Only G and H are adjacent as well as from the same standard i.e. 1st standard. Choice (C)
- B, a 2nd standard student, is not adjacent to a 3rd standard student.
 \therefore (A) is false.
Both A and F (i.e., 3rd standard students) are adjacent to 2nd standard students.
 \therefore (B) is true
G and H are from the same standard and are adjacent to each other.
 \therefore (C) is false. Choice (B)
- By observation, C, H, D and E satisfy the required condition, i.e., four students. Choice (C)
- Four students are taller than Hari. Of these four students three belong to a different standard. Choice (B)

Solutions for questions 5 to 8:

We can arrive at the following ranking table with the information given in the question:

	Durg	Mayurbhag	Jaintia Hills	Kundrème	Singhbhan
Cost	4				5
Distance		3	5		
Speed		5			

From condition (i) and condition (v) Durg mine cannot get a rank of 1 in distance and speed and as two mines can't get the same rank in any two parameters, drug gets 2nd rank in distance, and 3rd rank in speed.

Based on the conditions that no two mines got the same rank in any parameter and no mine got the same rank in any two parameters, the ranks of all the mines in all the parameters can be arrived at.

The final table looks as below:

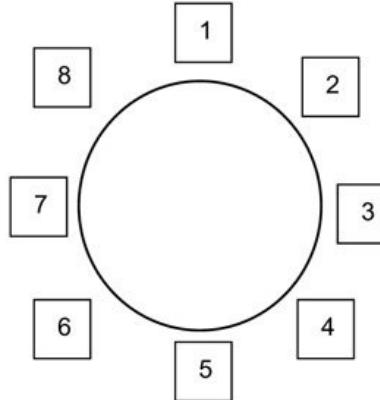
	Durg	Mayurbhanj	Jaintia Hills	Kudremukh	Singhbhan
Cost	4	2	3	5	1
Distance	2	3	5	1	4
Speed	3	5	1	4	2

- Kudremukh, which was ranked 1 in distance, is the nearest to the factory. Choice (C)
- The rank of Singhbhum in the speed of carriage is 2. Hence the carriage vehicles from Singhbhum travel the second fastest. Choice (B)
- The sum of the ranks is 7 for Singhbhum and it is more than 8 for all the other mines. Hence, the company can source from only one mine. Choice (B)
- By observation, we can see that no two mines satisfy the given condition. Ans: (0)

Solutions for questions 9 to 11:

- A person has to take maximum number of turns if the person follows the path P – E – D – G – H – Q. In this case, the person has to take turns at E, D, G and H i.e., four turns. Ans: (4)
- As the person took one left and one right turns, he must have followed the routes P–A–D–G–J–Q or P–E–D–C–H–Q or P–E–F–G–H–Q. In any case, he will not take a turn at D.
Alternatively, a person would have already taken one turn by the time he reaches D. Also, from D, the only route via which he can reach Q with exactly one more turn is either the route P–A–D–G–J–Q or P–E–D–C–H–Q. Either ways, he cannot take a turn at D. Choice (B)
- From points E, F, I and J the person can only take left turns and move northwards and from other points he can take right turns to move eastwards. Choice (D)

Solutions for questions 12 to 15:



Given that A was sitting opposite C and E was sitting opposite G. A's spouse cannot be C (since C is opposite A), H (from (ii)). Hence, A's spouse can be B or G.

D's spouse cannot be G or H. Hence, D's spouse can be B or C. E's spouse also can be B or C. Since G cannot be the spouse of D or E, G has to be the spouse of A.

Let the following diagram represent the chairs around the table:
Let A be at 1, and C be at 5. From (iii), B will be at 6.

If D's spouse is C, B and E will be married to each other. From (iii), D will be at 7. Since E and G must be opposite each other, they must be at 8 and 4 (G cannot be at 8 as she will be sitting next to his spouse, A). In this case, F and H will have to sit at 2 and 3. This will violate the given information as a married couple cannot sit next to each other. Hence, D's spouse cannot be C.

If E's spouse is C, D will be married to B. In this case, E will be at 7 and G will be at 3 (from (i)). Also, A and B are wearing Green dresses. E is wearing Blue dress. C cannot be wearing a Green dress (since she is opposite A) and cannot be wearing a Blue dress (since she is married to E). Hence, C will be wearing a Red dress. G cannot wear a Blue dress (since she is opposite

E) and cannot wear a Green dress (since she is married to A). Hence, G must wear a Red dress.

If D is in 2, F and H will be opposite each other. Hence, D cannot be in 2. If D is in 8, D must be wearing a Red dress (since A and E, who are adjacent to D, are wearing a Green dress and a Blue dress respectively). This will violate (ii) and hence, D must be in 4, wearing a Blue dress (since D's spouse, B, is wearing a Green dress). F and H will be in 8 and 2 in any order. This is the only possible case.

Position	Person	Spouse	Dress Colour
1	A	G	Green
2	F/H	H/F	Blue
3	G	A	Red
4	D	B	Blue
5	C	E	Red
6	B	D	Green
7	E	C	Blue
8	H/F	F/H	Red

12. Irrespective of where F sits, he will be sitting adjacent to A.
Choice (A)

13. D's spouse B, is wearing a Green dress.
Choice (C)

14. Both the persons sitting adjacent to G will be wearing a Blue dress.
Choice (D)

15. The spouse of E is wearing a Red dress.
Choice (C)

Difficulty level wise summary - Section II	
Sub Section: LR	
Level of Difficulty	Questions
Very Easy	11
Easy	1, 9, 10
Medium	2, 3, 4, 5, 6, 7, 8
Difficult	12, 13, 14, 15
Very Difficult	-

SECTION – III: QA

Solutions for questions 1 to 30:

1. Let the number of chocolates with A be 100
Number of chocolates with B = $1.2(100) = 120$
No. of chocolates with A = $\frac{2}{3} \times (\text{No. of Chocolates with C})$
 \therefore No. of Chocolates with B = $\frac{2}{3} \times 1.2 (\text{No. of chocolates with C})$
 $\Rightarrow 120 = 0.8 (\text{No. of chocolates with C})$
 \therefore Number chocolates with C = 150
 \therefore B is less than (A + C) by
$$\left[\frac{(100 + 150) - 120}{(100 + 150)} \right] \times 100 = 52\%$$

Choice (D)

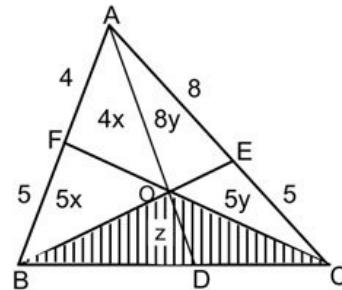
2. Assuming $x = t$ as the common root of the two equations, we get
 $t^2 - at + b = 0 \rightarrow (1)$ and $t^2 - bt + a = 0 \rightarrow (2)$
subtracting eq. (2) from eq (1), we get.
 $-at + bt + b - a = 0$
 $t(b - a) + 1(b - a) = 0$
 $(b - a)(t + 1) = 0$
 $\therefore b \neq a; t = -1$
Now, substituting $t = -1$ in eq (1), we get,
 $(-1)^2 - b(-1) + a = 0$
 $\Rightarrow a + b = -1$
Ans: (-1)

3. Sum of the weights of the 15 items = $15 \times 30 = 450$
To find the minimum value of any weight, we need to make sure that the remaining weights attain maximum values.

As no weight is more than 32 kg, the maximum sum of the remaining 14 weights = $14 \times 32 = 448$.

Therefore the minimum value possible for the smallest weight is $(450 - 448) = 2$.
Choice (A)

4.



In the given triangle,

$$\frac{\Delta AOF}{\Delta BOF} = \frac{\Delta ACF}{\Delta BCF} = \frac{4}{5} \quad (\text{triangles with same altitude})$$

$$\text{Similarly, } \frac{\Delta AOE}{\Delta COE} = \frac{\Delta ABE}{\Delta CBE} = \frac{8}{5}$$

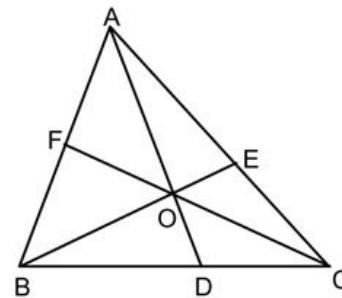
Now, let areas of ΔAOF and ΔBOF be $4x$ and $5x$ respectively and let areas of ΔAOE and ΔCOE be $8y$ and $5y$ respectively. Let area of ΔBOE = z .

$$\text{Now, } \frac{\Delta ACF}{\Delta BCF} = \frac{4x + 8y + 5y}{5x + z} = \frac{4}{5} \Rightarrow y = \frac{4z}{65}$$

$$\text{and } \frac{\Delta ABE}{\Delta CBE} = \frac{8y + 4x + 5x}{5y + z} = \frac{8}{5} \Rightarrow x = \frac{8z}{45}$$

$$\text{Now, we need } \frac{\Delta BOF}{\Delta COE}, \text{ i.e., } \frac{5x}{5y} = \frac{x}{y} = \frac{\left(\frac{8z}{45}\right)}{\left(\frac{43}{65}\right)} = \frac{26}{9}$$

Alternative Solution:



$$\text{It is given that } AB = 9 \text{ and } \frac{AF}{FB} = \frac{4}{5}$$

$$\therefore AF = 4 \text{ and } FB = 5$$

$$\text{Similarly } AE = 8 \text{ and } EC = 5$$

$$\text{Now } \frac{BD}{DC} =$$

$$\frac{\Delta BOD}{\Delta COD} = \frac{\Delta ABD}{\Delta ACD} = \frac{\Delta ABD - \Delta BOD}{\Delta ACD - \Delta COD}$$

$$\Rightarrow \frac{BD}{DC} = \frac{\Delta AOB}{\Delta AOC}$$

$$\text{Similarly } \frac{CE}{EA} = \frac{\Delta BOC}{\Delta AOB} \text{ and } \frac{AF}{FB} = \frac{\Delta AOC}{\Delta BOC}$$

$$\therefore \left(\frac{AF}{FB} \right) \left(\frac{BD}{DC} \right) \left(\frac{CE}{EA} \right) = \left(\frac{\Delta AOC}{\Delta BOC} \right) \left(\frac{\Delta AOB}{\Delta AOC} \right)$$

$$\left(\frac{\Delta BOC}{\Delta AOB} \right) = 1$$

$$\therefore (AF)(BD)(CE) = (FB)(DC)(EA)$$

$$\text{Let } BD = x \text{ and } DC = y$$

$$\therefore (4)(x)(5) = (5)(y)(8)$$

$$\Rightarrow x = 2y$$

$$\text{As } BC = 12, \text{ so } BD = 8 \text{ and } DC = 4$$

Since $\frac{AF}{FB} = \frac{\Delta AOF}{\Delta BOF} = \frac{4}{5}$, let $\Delta AOF = 4a$ and $\Delta BOF = 5a$
 $\therefore \Delta AOB = 9a$

Similarly $\frac{AE}{AC} = \frac{\Delta AOE}{\Delta COE} = \frac{8}{5}$

Let $\Delta AOE = 8b$ and $\Delta COE = 5b$

$\therefore \Delta AOC = 13b$

Now, $\frac{BD}{DC} = \frac{\Delta AOB}{\Delta AOC} = \frac{2}{1}$

$$\therefore \frac{9a}{13b} = \frac{2}{1} \Rightarrow \frac{a}{b} = \frac{26}{9}$$

$$\therefore \frac{\Delta BOF}{\Delta COE} = \frac{5a}{5b} = \frac{26}{9}$$

Choice (A)

5. It is given that, $t\%$ of $t = 25$

$$\Rightarrow \frac{t}{100} \times t = 25 \Rightarrow t^2 = 2500$$

$\therefore t = 50$ [$\because t$ is a positive real number]

Choice (A)

6. It is given that,

$$f(x) = x^4 - 3x^3 - 7x^2 - 10x - 25$$

$$g(x) = x^4 - 4x^3 + x^2 - 27x - 15$$

Let us consider $x^4 - 3x^3 - 7x^2 - 10x - 25 = 0$ _____ (1)
and $x^4 - 4x^3 + x^2 - 27x - 15 = 0$ _____ (2)

If the two equations have a common root, their difference will also be satisfied by that root.

Subtracting eq (2) from eq (1), we get

$$x^3 - 8x^2 + 17x - 10 = 0$$
 _____ (3)

The solutions to this equation are basically the points of intersection of $f(x)$ and $g(x)$

We check that $x = 1$ satisfies the above equation,
i.e., $(x - 1)$ is a factor.

$$\Rightarrow x^3 - 8x^2 + 17x - 10 = (x - 1)(x^2 - 7x + 10)$$

$$= (x - 1)(x - 2)(x - 5)$$

$$\therefore (x - 1)(x - 2)(x - 5) = 0. \Rightarrow x = 1 \text{ or } x = 2 \text{ or } x = 5$$

Now substituting $x = 1$, $x = 2$ and $x = 5$ and checking if $f(x) = g(x) = 0$, we see that $x = 5$ is the only root common to $f(x) = 0$ and $g(x) = 0$.
Ans: (1)

7. Let the age of Geetha be x and that of Sita be y .

$$\text{Age of Rita} = x + 7$$

After five years ages of Sita, Geetha and Rita will be $y + 5$, $x + 5$ and $x + 12$ years respectively,

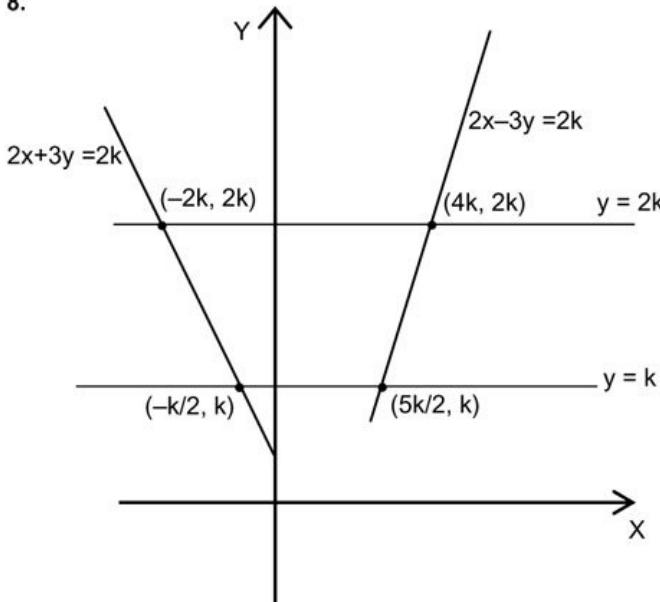
$$2(x + 12) = y + 5 \text{ and } 4(x + 5) = y + 5$$

$$\Rightarrow 2x + 24 = 4x + 20 \Rightarrow x = 2 \text{ years.}$$

$$\text{Age of Sita} = y = 2(x + 12) - 5 = 28 - 5 = 23 \text{ years.}$$

Ans: (23)

- 8.



The points of intersection of the line $y = k$ with the lines $2x + 3y = 2k$ and $2x - 3y = 2k$ gives us the points $(-\frac{k}{2}, k)$

and $(\frac{5k}{2}, k)$ respectively.

Similarly, the points of intersection of the line $y = 2k$ with the lines $2x + 3y = 2k$ and $2x - 3y = 2k$ gives us the points $(-2k, 2k)$ and $(4k, 2k)$ respectively.

As $y = k$ and $y = 2k$ are parallel to each other, we get a trapezium whose area

$$= \frac{1}{2} \left[(4k + 2k) + \left(\frac{5k}{2} + \frac{k}{2} \right) \right]$$

$$[2k - k] = \frac{9}{2} k^2$$

$$\text{It is given that, } \frac{9k^2}{2} = 18k$$

$$\Rightarrow k^2 - 4k = 0$$

$$\Rightarrow k(k - 4) = 0$$

$$\therefore k \neq 0, \text{ so } k = 4$$

Alternative Solution:

We can find the area of the figure using the four vertices as

$$\Rightarrow \frac{1}{2} \begin{vmatrix} -2k & 4k & 5k/2 & -k/2 & -2k \\ 2k & 2k & k & k & 2k \end{vmatrix} = 18k$$

$$\Rightarrow \frac{1}{2} \left[-4k^2 - 8k^2 + 4k^2 - 5k^2 + \frac{5k^2}{2} - k^2 + 2k^2 \right] = 18k$$

$$\Rightarrow \frac{1}{2} 9k^2 = 18k$$

$$\Rightarrow k(k - 4) = 0$$

$$\therefore k = 4$$

Ans: (4)

9. Let the number of people to whom the king has given the coins be n .

$$\frac{1}{1} + \frac{2}{1} + \frac{3}{1} + \dots + \frac{n}{1} = 3276$$

$$\Rightarrow \left[1 + 3 + 6 + \dots + \frac{n(n+1)}{2} \right] = 3276$$

$$\Rightarrow \sum_{1}^n \frac{i(i+1)}{2} = 3276$$

$$\Rightarrow \frac{1}{2} \left[\sum_{1}^n (i^2 + i) \right] = 3276 \Rightarrow \Sigma i^2 + \Sigma i = 6552$$

$$\Rightarrow \frac{n(n+1)(2n+1)}{6} + \frac{n(n+1)}{2} = 6552.$$

Among the choices, only $n = 26$ satisfies the above equation.

$$\therefore n = 26$$

Choice (B)

10. It is given that, $\sqrt{x} > 3x$

$$\text{Let } x = t^2, \text{ so } t > 3t^2$$

$$\Rightarrow 3t^2 - t < 0$$

$$\Rightarrow t(3t - 1) < 0$$

Therefore $0 \leq t \leq \frac{1}{3}$ satisfies the above inequality.

The maximum value of t is $\frac{1}{3}$ and the maximum value of x is $\frac{1}{9}$ ($\because x = t^2$)

Choice (C)

11. All the boxes contain a distinct number of chocolates. For each combination of 4 out of the 8 boxes, the box with the

greatest number has to be given to the first person, the box with the second highest to the second person and so on.
 \therefore The number of ways of giving 4 boxes (out of 8) to the 4 persons is 8C_4 or $\frac{8(7)(6)(5)}{(2)(3)(4)} = 70$ Ans: (70)

12. Let y students take all four items. Now, y is maximised when all students take either exactly two or exactly four items each (i.e., no student takes exactly three items). Total number of instances $= 375 \times 4 = 1500$, of which 525×2 (i.e., 1050) are accounted for by all students taking two items each.

Now, let y students take all four items (i.e., 2 items more than the initial assumption of two items each)
 $\text{Then } 1050 + 2y = 1500 \Rightarrow y = 225$

Hence, at most 225 students can take all four items.
 Ans: (225)

13. We consider the statements one by one
- If we have one odd x (and all others even)
 $x_1x_2 + x_2x_3 + \dots + x_nx_1$ would be even and $x_1x_2\dots x_n$ would be even. \therefore The difference would be even.
 \therefore I is false.
 - If we take all even x 's the condition is satisfied.
 \therefore II is true.
 - If all the x 's are odd, $x_1x_2 + x_2x_3 + \dots + x_nx_1$ would be odd and $x_1x_2\dots x_n$ would also be odd.
 \therefore The difference would be even.
 - The difference would be even.
 - All the x 's can be even.
 \therefore IV is false
 - Only II and III are true.

Choice (B)

14. Let us find the minimum value of $a\tan^2\theta + b\cot^2\theta$
 $AM \geq GM$

$$\frac{a\tan^2\theta + b\cot^2\theta}{2} \geq \sqrt{a\tan^2\theta b\cot^2\theta}$$

$$a\tan^2\theta + b\cot^2\theta \geq 2\sqrt{ab}$$

$$\therefore 8\tan^2\theta + 18\cot^2\theta \geq 2\sqrt{8 \times 18}$$

$$8\tan^2\theta + 18\cot^2\theta \geq 24$$

Alternative Solution:

Since the product of the two terms of the given expression is a constant ($8\tan^2\theta \times 18\cot^2\theta = 144$), the sum of the two terms will be the minimum when each term is equal to square root of the product, i.e., $\sqrt{144} = 12$.

Hence, minimum sum $= 12 + 12 = 24$. Ans: (24)

15. $3x + 5$ is an increasing function and $(10 - 2x)$ is a decreasing function,
 $\Rightarrow \text{Max } [\min (3x + 5, 10 - 2x)]$ occurs when $3x + 5 = 10 - 2x \Rightarrow x = 1$
 $\therefore \text{Max } [\min (3x + 5, 10 - 2x)] = 3(1) + 5 = 8$. Ans: (8)

16. Sum of the elements of $X = 31$ ----- (1)
 X has 7 elements. Six-digit numbers divisible by 3 have to be formed.
 \therefore Only 6 elements of X have to be used i.e., 1 element has to be eliminated. The sum of the digits of each number formed must be divisible by 3.
 $(1) \Rightarrow$ Only possible element which can be eliminated is 1.
 The six-digit numbers have the digits 0, 2, 5, 6, 8 and 9.
 The number of possible digits in the first, second, third, fourth, fifth and sixth positions are 5, 5, 4, 3, 2 and 1 respectively.
 \therefore Number of numbers which can be formed $= 5(5)(4)(3)(2)(1) = 600$ Ans: (600)

17. Let the number of sons and daughters of Shankerlal be denoted by s and d respectively. The number of brothers and sisters of Lajwanti and Bhola are as follows

Lajwanti	Brothers	Sisters
Bhola	s $(s-1)$	$(d-1)$ d

It is given that, $(d-1) = 2s$ and $d = 3(s-1)$
 $\Rightarrow 2s+1 = 3(s-1)$
 $\Rightarrow s=4$ and $d=9$

Thus, Shankerlal has 13 children in all

Choice (D)

18. The values of the variables a , b , Y change as follows after each of the 5 steps of the algorithm.

<u>a</u>	<u>b</u>	<u>Y</u>
1. a_1	b_1	$10a_1 + b_1$
2. $a_1 + b_1$		
3.	a_1	
4. b_1		
5.		$9(a_1 - b_1)$

$\therefore Y$ is always divisible by 9.

Choice (A)

19. Since $AE : EB = DF : FC$, EF is parallel to AD .

Further, $AH = BF = \frac{\ell}{2} \Rightarrow HP$ is parallel to DC . Now, the sum of the areas of all the triangles drawn inside a rectangle, such that the sum of the bases of the triangles is same as one of the sides of the rectangle and the height of each triangle is same as the other side of the rectangle, is equal to half the area of the rectangle.

$$\therefore \text{Area of the shaded region} = \frac{1}{2} (\text{area of EBCF}) + \frac{1}{2} (\text{Area of AEKH}) + \frac{1}{2} (\text{Area of HKFD})$$

$$= \frac{1}{2} (\text{Area of rectangle ABCD}) = \frac{1}{2} \times 15 \times 10 = 75 \text{ sq.cm}$$

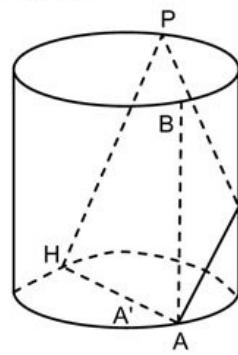
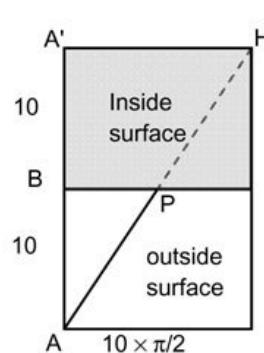
Alternative solution:

Each triangle in the figure can individually be imagined to be inscribed in a corresponding small (non-overlapping) rectangle. Now, the area of each triangle will be exactly half of its corresponding rectangle. Since the sum of all the smaller rectangles = Area of ABCD, the sum of the areas of

$$\text{all triangles} = \left(\frac{\text{Area of ABCD}}{2} \right).$$

Choice (A)

20. The cylindrical glass can be imagined to be cut vertically in half by a plane containing the drop of honey and the ant. The curved surface of the half glass can be opened up (into a rectangle) as shown below with the inside surface of the glass also opened up (and shown in grey)



Let the ant and the drop of honey be shown as A and H respectively. A' is a point immediately beside the ant but inside the glass.

Now there are two routes that need to be considered. The first, where the ant goes vertically up to point B and then vertically down to A' and then diametrically across to H

along ABAH. The second, is where the ant goes around the glass and up (simultaneously) and thus travels in a diagonal path touching the upper rim of the glass at a point P (exactly midway on its path) and then descends while going around the glass (but inside now) and reaches H in a

diagonal path APH (APH can be more clearly understood in the figure where the cylinder is cut and opened up). Clearly APH is shorter (the shortest distance between any two points in a plane is the length of the

straight line joining them) and equals $\sqrt{(AA')^2 + (A'H)^2}$

$$= \sqrt{20^2 + \frac{10^2 \times \pi^2}{2^2}} \approx \sqrt{646.94} = 25.435$$

$$\approx 254.35 \text{ mm}$$

$$= 254 \text{ mm (rounded off to the nearest mm).}$$

Ans: (254)

21. If x is even, then the number of boys should be equal to the number of girls, let each be n .

$$\Rightarrow x = 2n$$

$$\text{Then the number of arrangements} = 2 \times n! \times n!$$

If one more student is added, then the number of arrangements $= n! \times (n+1)!$

But this is 200% more than the earlier $\Rightarrow 3$ times.

$$\therefore 2 \times n! \times n! \times 3 = n!(n+1)!$$

$$\Rightarrow n+1 = 6$$

$$\Rightarrow n = 5 \Rightarrow x = 10$$

But if x is odd, then number of arrangements $= n!(n+1)!$, where $x = 2n+1$

When one student is included, number of arrangements $= 2(n+1)! (n+1)!$ (as the difference of girls and boys cannot be two)

$$\Rightarrow 2(n+1)! (n+1)! = 3.n! (n+1)!$$

$$\Rightarrow 2(n+1) = 3$$

Which is not possible.

Alternative Solution:

The question can also be solved by numerically checking for each option.

For example, If $x = 12$, then $y = 2 \times 6! \times 6!$ and after one student is added it will be $6! 7!$.

And $6! 7!$ is not 200% more than $6! \times 6!$ Ans: (10)

22. Let the value of each instalment be x .

The amount at the end of the first year

$$= 67100 \times \frac{6}{5}$$

Amount due after paying the first instalment

$$= 67100 \times \frac{6}{5} - x$$

Proceeding similarly amount due after paying the fourth instalment is zero.

$$\left(\left(67100 \times \frac{6}{5} - x \right) \frac{6}{5} - x \right) \frac{6}{5} - x = 0$$

$$\Rightarrow \left(\left(67100 \times \frac{6}{5} - x \right) \frac{6}{5} - x \right) \frac{6^2}{5^2} = \frac{11}{5}x$$

$$\Rightarrow \left(67100 \times \frac{6}{5} - x \right) \frac{6^3}{5^3} = \frac{91}{25}x$$

$$\Rightarrow 67100 \times \frac{6^4}{5^4} = \frac{671}{125}x$$

$$\Rightarrow x = 67100 \times \frac{6^4}{5^4} \times \frac{125}{671}$$

$$\Rightarrow x = 25920.$$

Alternative solution:

Instalment amount, can be found using the formula for EMI:

$$x = \frac{67100 \times \frac{20}{100}}{1 - \left(\frac{100}{100+20} \right)^4} = ₹25920$$

Ans: (25920)

23. When P covers the last 200 m, Q completes 800 m. Hence their speeds are in the ratio 1 : 4. In the same way the speeds of Q and R are in the ratio 1 : 2 and that of R and S are in the ratio 3 : 4.

\therefore The required ratio of speeds is 3 : 12 : 24 : 32.

Choice (A)

24. Original area of the rectangle = lb

$$\begin{aligned} \text{Present area of the rectangle} &= (l - 0.3l)(b - 0.2b) \\ &= (0.7l)(0.8b) \\ &= 0.56 lb \end{aligned}$$

Therefore, the percentage reduction in the area of the rectangle is 44%

Note: Since the percentage reduction in area is required the ratio of length to breadth is not relevant. However, the ratio would be necessary, if the percentage reduction in perimeter was required.

Choice (C)

25. Let $\frac{p-q-r}{p} = \frac{q-r-p}{q} = \frac{r-p-q}{r} = k$

$$\therefore p-q-r = kp, q-r-p = kq \text{ and } r-p-q = kr$$

Adding the three equations given above, we get $p+q+r = -k(p+q+r)$

$$(p+q+r)(1+k) = 0$$

$$\therefore k = -1 \text{ or } p+q+r = 0$$

$$\Rightarrow -q-r = p$$

$$\therefore \frac{p-q-r}{p} = \frac{p+p}{p} = 2$$

Therefore the value of k is -1 or 2 , i.e., two distinct values.

Choice (C)

26. One can wear the rings in 3 ways.

1. One ring on each of the 3 fingers.
2. 2 rings on one finger and 1 ring on another.
3. All 3 rings on a single finger.

Case I: (111) The 3 fingers can be chose in 5C_3 ways.

Now 3 rings can be arranged in those 3 fingers in $3!$ ways.

Total $3! {}^5C_3 = 60$ ways.

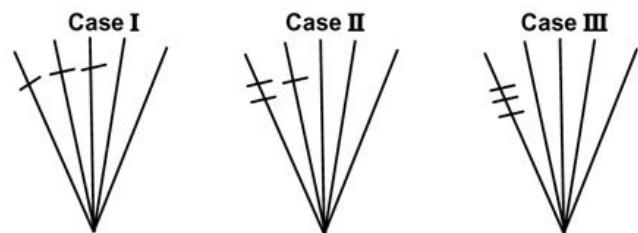
Case II: (2, 1, 0) The 2 fingers with rings can be chosen 5C_2 ways. Among them the finger with 2 rings in 2C_1 or 2 ways. Then the 2 rings on that finger can be chosen in 3C_2 ways and arranged in that finger in $2!$ ways.

Total ${}^5C_2 {}^2C_1 {}^3C_2 (2!) = 120$ ways.

Case III: (3, 0, 0) The finger can be chosen in 5C_1 ways and the 3 rings arranged on it in $3!$ ways.

Total $= {}^5C_1 3! = 30$ ways

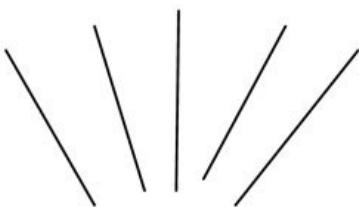
Total number of ways $= 120 + 60 + 30 = 210$



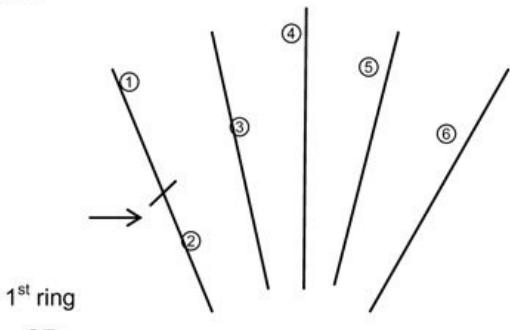
Alternative Solution I:

There are 5 places for the first ring.

Now for each way in which one wears the 1st ring, the second ring can be worn in 6 ways, for there are 6 places for the 2nd ring.

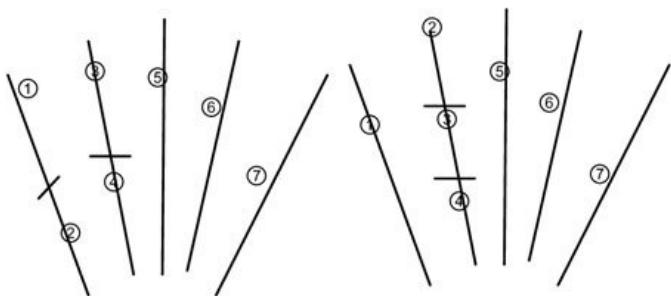


Similarly after wearing 2 rings, the situation would be as either.



1st ring

OR



In each case there are 7 places for the 3rd ring. So total number of ways = $5 \times 6 \times 7 = 210$ ways.

Alternative Solution II:

Let the number of rings in the five fingers be represented by a, b, c, d, e respectively.

Now, $a + b + c + d + e = 3$ where $a, b, c, d, e > 0$.

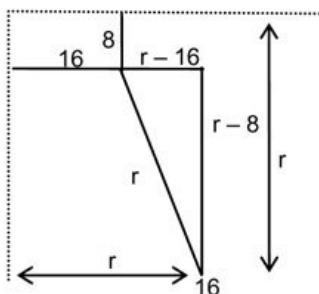
Number of non-negative integral solution for $a + b + c + d + e = 3$ is ${}^{3+5-1}C_{5-1} = {}^7C_4 = {}^7C_3$ TY= 35

Since, the rings are distinct, so they can be arrange among themselves in $3!$ ways.

Total 35 (6) = 210 ways.

Ans: (210)

27. Let OP = r cm



$$r^2 = (r - 16)^2 + (r - 8)^2.$$

$$\Rightarrow r^2 - 48r + 320 = 0$$

By solving, we get $r = 8$ or 40

But as $(r - 16)$ is positive, only $r = 40$ satisfies the equation above.

Ans: (40)

28. Let the price of petrol at the beginning of the first quarter in 2015 be P .

It is given that,

$$P \times \frac{4}{3} \times \frac{5}{4} \times \frac{5}{6} \times \left[1 - \frac{x}{100} \right] = P$$

$$\Rightarrow \left(1 - \frac{x}{100} \right) = \frac{18}{25} = 1 - \frac{7}{25}$$

$$\therefore \frac{x}{100} = \frac{7}{25} \Rightarrow x = 28\%$$

Choice (B)

29. Let the distance she covers by 9:00 a.m. be $4x$. After travelling further by 75% of that distance, i.e., by the time she covers a total of $7x$, she covers $\frac{3}{4}$ of the total distance between her house and college.

$$\therefore \text{The total distance is } \frac{4}{3}(7x) \text{ or } \frac{28x}{3}$$

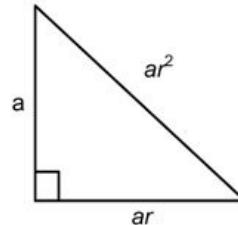
Now, the distance she covered between 8:00 a.m., and 9:00 a.m. is $\frac{4x(3)}{28x} = \frac{3}{7}$ th of the total distance.

\Rightarrow The distance she covers from 8:00 a.m. to 10:00 a.m.

$$= 2 \times \frac{3}{7} = 6/7^{\text{th}}$$
 of the total distance.

Choice (D)

- 30.



Let the sides of the triangle be a, ar and ar^2 .

Since it is a right-angled triangle, $a^2 + (ar)^2 = (ar^2)^2$

(By Pythagoras theorem)

$$\Rightarrow 1 + r^2 = r^4$$

$$\Rightarrow r^4 - r^2 - 1 = 0$$

$$\therefore r^2 = \frac{1 \pm \sqrt{5}}{2}$$

Now, since $r^2 > 0$

$$\therefore r^2 = \frac{\sqrt{5} + 1}{2}$$

Now, the ratio of the length of the hypotenuse to that of the

shortest side is nothing but r^2 (i.e., $\frac{ar^2}{a} = r^2$).

$$\text{Hence, required ratio} = \frac{1+\sqrt{5}}{2}$$

Choice (C)

Difficulty level wise summary - Section III: QA	
Level of Difficulty	Questions
Very Easy	3, 5
Easy	1, 2, 7, 10, 11, 17, 23, 24, 28, 29, 30
Medium	12, 13, 15, 16, 18, 19, 25, 27
Difficult	4, 6, 8, 9, 14, 20, 21, 22
Very Difficult	26