

Model Test Paper 6
General Study Paper II

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TEST BOOKLET
GENERAL STUDIES
Paper-II

B

Time Allowed : Two Hours

Maximum Marks : 200

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION YOU SHOULD CHECK THAT THE TEST BOOKLET *DOES NOT* HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC, IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate place in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside . *DO NOT* write *anything else* on the Test Booklet.
4. This Test Booklet contains **80** items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose *ONLY ONE* response for each item.
5. You have to mark all your responses *ONLY* on the separate Answer Sheet provided.
6. **All** items carry equal marks.
7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the invigilator only the *Answer Sheet*. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. **Penalty for wrong Answers :**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
(i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
(ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
(iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

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It can be argued that much consumer dissatisfaction with marketing strategies arises from an inability to aim advertising at only the likely buyers of a given product.

There are three groups of consumers who are affected by the marketing process. First, there is the market segment—people who need the commodity in question. Second, there is the program target—people in the market segment with the “best fit” characteristics for a specific product. Lots of people may need trousers, but only a few qualify as likely buyers of very expensive designer trousers. Finally, there is the program audience—all people who are actually exposed to the marketing program without regard to whether they need or want the product.

These three groups are rarely identical. An exception occurs occasionally in cases where customers for a particular industrial product may be few and easily identifiable. Such customers, all sharing a particular need, are likely to form a meaningful target, for example, all companies with a particular application of the product in question, such as high-speed fillers of bottles at breweries. In such circumstances, direct selling (marketing that reaches only the program target) is likely to be economically justified, and highly specialized trade media exist to expose members of the program target—and only members of the program target—to the marketing program.

Most consumer-goods markets are significantly different. Typically, there are many rather than few potential customers. Each represents a relatively small percentage of potential sales. Rarely do members of a particular market segment group themselves neatly into a meaningful program target. There are substantial differences among consumers with similar demographic characteristics. Even with all the past decade’s advances in information technology, direct selling of consumer goods is rare, and mass marketing—a marketing approach that aims at a wide audience—remains the only economically feasible mode. Unfortunately, there are few media that allow the marketer to direct a marketing program exclusively to the program target. Inevitably, people get exposed to a great deal of marketing for products in which they have no interest and so they become annoyed.

1. The passage suggests which of the following about highly specialized trade media?

(a) They should be used only when direct selling is not economically feasible.

(b) They can be used to exclude from the program audience people who are not part of the program target.

(c) They are used only for very expensive products.

(d) They are rarely used in the implementation of marketing programs for industrial products.

2. According to the passage, most consumer-goods markets share which of the following characteristics?

I. Customers who differ significantly from each other

II. Large numbers of potential customers

III. Customers who each represent a small percentage of potential sales

(a) I only

(b) II only

(c) I and II only

(d) I, II, and III

3. The passage suggests which of the following about direct selling?

(a) It is used in the marketing of most industrial products.

(b) It is often used in cases where there is a large program target.

(c) It is not economically feasible for most marketing programs.

(d) It is used only for products for which there are many potential customers.

4. The author mentions “trousers” most likely in order to

(a) make a comparison between the program target and the program audience

(b) emphasize the similarities between the market segment and the program target

(c) provide an example of the way three groups of consumers are affected by a marketing program

(d) clarify the distinction between the market segment and the program target

5. Which of the following best exemplifies the situation described in the last two sentences of the passage?

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<p>(a) A product suitable for women age 21-30 is marketed at meetings attended only by potential customers.</p> <p>(b) A company develops a new product and must develop an advertising campaign to create a market for it.</p> <p>(c) An idea for a specialized product remains unexplored because media exposure of the product to its few potential customers would be too expensive.</p> <p>(d) A product suitable for men age 60 and over is advertised in a magazine read by adults of all ages.</p> <p>6. The passage suggests that which of the following is true about the marketing of industrial products like those discussed in the third paragraph?</p> <p>(a) The market segment and program target are identical.</p> <p>(b) Mass marketing is the only feasible way of advertising such products.</p> <p>(c) The marketing program cannot be directed specifically to the program target.</p> <p>(d) More customers would be needed to justify the expense of direct selling.</p> <p>7. The passage supports which of the following statements about demographic characteristics and marketing?</p> <p>(a) Demographic research is of no use in determining how successful a product will be with a particular group of consumers.</p> <p>(b) A program audience is usually composed of people with similar demographic characteristics.</p> <p>(c) Psychological factors are more important than demographic factors in defining a market segments.</p> <p>(d) Consumers with similar demographic characteristics do not necessarily form a meaningful program target.</p> <p>8. It can be inferred from the passage that which of the following is true for most consumer-goods markets?</p> <p>(a) The program audience is smaller than the market segment.</p>	<p>(b) The program audience and the market segment are usually identical.</p> <p>(c) The program target and the program audience are not usually identical.</p> <p>(d) The market segment and the program target are usually identical.</p> <p>Protein synthesis begins when the gene encoding a protein is activated. The gene's sequence of nucleotides is transcribed into a molecule of messenger RNA (mRNA), which reproduces the information contained in that sequence. Transported outside the nucleus to the cytoplasm, the mRNA is translated into the protein it encodes by an organelle known as a ribosome, which strings together amino acids in the order specified by the sequence of elements in the mRNA molecule. Since the amount of mRNA in a cell determines the amount of the corresponding protein, factors affecting the abundance of mRNA's play a major part in the normal functioning of a cell by appropriately regulating protein synthesis. For example, an excess of certain proteins can cause cells to proliferate abnormally and become cancerous; a lack of the protein insulin results in diabetes. Biologists once assumed that the variable rates at which cells synthesize different mRNA's determine the quantities of mRNA's and their corresponding proteins in a cell. However, recent investigations have shown that the concentrations of most mRNA's correlate best, not with their synthesis rate, but rather with the equally variable rates at which cells degrade the different mRNA's in their cytoplasm. If a cell degrades both a rapidly and a slowly synthesized mRNA slowly, both mRNA's will accumulate to high levels.</p> <p>An important example of this phenomenon is the development of red blood cells from their unspecialized parent cells in bone marrow. For red blood cells to accumulate sufficient concentrations of hemoglobin (which transports oxygen) to carry out their main function, the cells' parent cells must simultaneously produce more of the constituent proteins of hemoglobin and less of most other proteins. To do this, the parent cells halt synthesis of non-hemoglobin mRNA's in the nucleus and rapidly degrade copies of the non-hemoglobin mRNA's remaining in the cytoplasm. Halting synthesis of mRNA alone would not affect the quantities of proteins synthesized by the mRNA's still existing in the cytoplasm. Biologists now believe that most cells can regulate protein production most efficiently by varying both mRNA synthesis and degradation, as developing red cells do, rather than by just varying one or the other.</p>
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<p>9. The passage is primarily concerned with discussing the</p> <p>(a) influence of mRNA concentrations on the development of red blood cells</p> <p>(b) role of the synthesis and degradation of mRNA in cell functioning</p> <p>(c) mechanism by which genes are transcribed into mRNA</p> <p>(d) differences in mRNA concentrations in cell nuclei and in the cytoplasm</p> <p>10. The passage suggests that a biologist who held the view described in the first sentence of the second paragraph would most probably also have believed which of the following?</p> <p>(a) The rate of degradation of specific mRNA's has little effect on protein concentrations.</p> <p>(b) The rate of degradation of specific mRNA's should be studied intensively.</p> <p>(c) The rates of synthesis and degradation for any given mRNA are normally equal.</p> <p>(d) Different mRNA's undergo degradation at widely varying rates.</p> <p>11. Which of the following best describes the relationship between the second and third paragraphs of the passage?</p> <p>(a) The second paragraph presents arguments in support of a new theory and the third paragraph presents arguments against that same theory.</p> <p>(b) The second paragraph describes a traditional view and the third paragraph describes the view that has replaced it on the basis of recent investigations.</p> <p>(c) The third paragraph describes a specific case of a phenomenon that is described generally in the second paragraph</p> <p>(d) The third paragraph describes an investigation that was undertaken to resolve problems raised by phenomena described in the second paragraph.</p> <p>12. The accumulation of concentrations of hemoglobin in red blood cells is mentioned in the passage as an example of which of the following?</p>	<p>(a) The effectiveness of simultaneous variation of the rates of synthesis and degradation of mRNA</p> <p>(b) The role of the ribosome in enabling a parent cell to develop properly into a more specialized form</p> <p>(c) The importance of activating the genes for particular proteins at the correct moment</p> <p>(d) The abnormal proliferation of a protein that threatens to make the cell cancerous</p> <p>13. To begin to control a disease caused by a protein deficiency, the passage suggests that a promising experimental treatment would be to administer a drug that would reduce</p> <p>(a) only the degradation rate for the mRNA of the protein involved</p> <p>(b) only the synthesis rate for the mRNA of the protein involved</p> <p>(c) both the synthesis and degradation rates for the mRNA of the protein involved</p> <p>(d) the incidence of errors in the transcription of mRNA's from genetic nucleotide sequences</p> <p>14. According to the passage, which of the following best describes the current view on the relationship between the synthesis and the degradation of mRNA in regulating protein synthesis?</p> <p>(a) Biologists have recently become convinced that the ribosome controls the rates of synthesis and degradation of mRNA.</p> <p>(b) Degradation of mRNA is now considered to be as important as mRNA synthesis has been, and still is, believed to be.</p> <p>(c) There is no consensus among biologists as to the significance of mRNA degradation in regulating protein synthesis.</p> <p>(d) The concept of mRNA degradation is so new that most biologists still believe that the vital role in protein regulation belongs to mRNA synthesis.</p> <p>15. According to the passage, which of the following can happen when protein synthesis is not appropriately regulated?</p> <p>(a) Diabetes can result from errors that occur when the ribosomes translate mRNA into protein.</p>
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<p>(b) Cancer can result from an excess of certain proteins and diabetes can result from an insulin deficiency.</p> <p>(c) A deficiency of red blood cells can occur if bone marrow cells produce too much hemoglobin.</p> <p>(d) Cancer can be caused by excessively rapid degradation of certain amino acids in the cytoplasm of cells.</p> <p>16. The passage suggests that a biologist who detected high levels of two proteins in a certain type of cell would be likely to consider which of the following as a possible explanation?</p> <p>(a) The rate of mRNA degradation for one of the proteins increases as this type of cell develops a more specialized function.</p> <p>(b) The two proteins are most likely constituents of a complex substance supporting the cells' specialized function.</p> <p>(c) The cells are likely to proliferate abnormally and possibly become cancerous due to the levels of these proteins.</p> <p>(d) The mRNA's for both proteins are being degraded at a low rate in that type of cell.</p> <p>In Forces of Production, David Noble examines the transformation of the machine-tool industry as the industry moved from reliance on skilled artisans to automation. Noble writes from a Marxist perspective, and his central argument is that management, in its decisions to automate, conspired against labor: the power that the skilled machinists wielded in the industry was intolerable to management. Noble fails to substantiate this claim, although his argument is impressive when he applies the Marxist concept of "de-skilling"—the use of technology to replace skilled labor—to the automation of the machine-tool industry. In automating, the industry moved to computer-based, digitized "numerical-control" (N/C) technology, rather than to artisan-generated "record-playback" (R/P) technology. Although both systems reduced reliance on skilled labor, Noble clearly prefers R/P, with its inherent acknowledgment of workers' skills: unlike N/C, its programs were produced not by engineers at their computers, but by skilled machinists, who recorded their own movements to "teach" machines to duplicate those movements. However, Noble's only evidence of conspiracy is that, although the two approaches were roughly equal in technical merit, management chose N/C. From this he concludes that automation is</p>	<p>undertaken not because efficiency demands it or scientific advances allow it, but because it is a tool in the ceaseless war of capitalists against labor.</p> <p>17. The author of the passage is primarily concerned with</p> <p>(a) reexamining a political position and defending its validity</p> <p>(b) examining a management decision and defending its necessity</p> <p>(c) analyzing a scholarly study and pointing out a central weakness</p> <p>(d) explaining a trend in automation and warning about its dangers</p> <p>18. According to information in the passage, the term "de-skilling" refers to the</p> <p>(a) loss of skills to industry when skilled workers are replaced by unskilled laborers</p> <p>(b) substitution of mechanized processes for labor formerly performed by skilled workers</p> <p>(c) labor theory that automation is technologically comparable to skilled labor</p> <p>(d) process by which skilled machinists "teach" machines to perform certain tasks</p> <p>19. Which of the following best characterizes the function of the second paragraph of the passage?</p> <p>(a) It develops a topic introduced in the first paragraph.</p> <p>(b) It provides evidence to refute a claim presented in the first paragraph.</p> <p>(c) It gives examples of a phenomenon mentioned in the first paragraph.</p> <p>(d) It presents a generalization about examples given in the first paragraph.</p> <p>20. The passage suggests which of the following about N/C automation in the machine-tool industry?</p> <p>(a) It displaced fewer skilled workers than R/P automation did.</p> <p>(b) It could have been implemented either by experienced machinists or by computer engineers.</p>
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(c) It was designed without the active involvement of skilled machinists.

(d) It was more difficult to design than R/P automation was.

21. Which of the following phrases most clearly reveals the attitude of the author of the passage toward Noble's central argument?

- (a) "conspired against"
- (b) "intolerable to management"
- (c) "impressive when he applies the Marxist concept"
- (d) "only evidence of conspiracy"

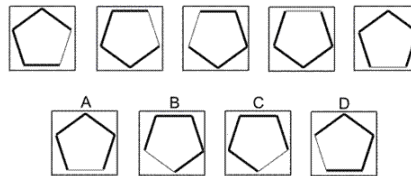
22. The author of the passage commends Noble's book for which of the following?

- (a) Concentrating on skilled as opposed to unskilled workers in its discussion of the machine-tool industry
- (b) Offering a generalization about the motives behind the machine-tool industry's decision to automate
- (c) Applying the concept of de-skilling to the machine tool industry
- (d) Making an essential distinction between two kinds of technology employed in the machine-tool industry

23. Which of the following best characterizes Forces of Production as it is described in the passage?

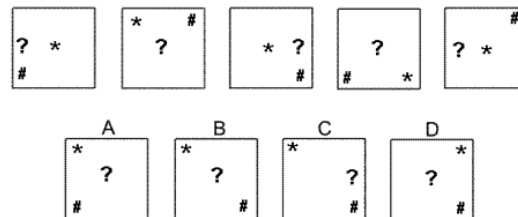
- (a) A comparison of two interpretations of how a particular industry evolved
- (b) An examination of the origin of a particular concept in industrial economics
- (c) A study that points out the weakness of a particular interpretation of an industrial phenomenon
- (d) A history of a particular industry from an ideological point of view

24.



- (a) A
- (b) B
- (c) C
- (d) D

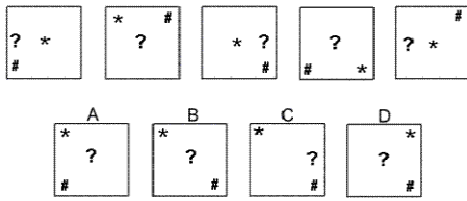
25.



- (a) A
- (b) B
- (c) C
- (d) D

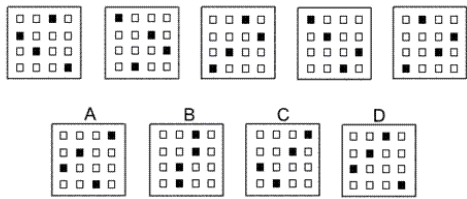
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26.



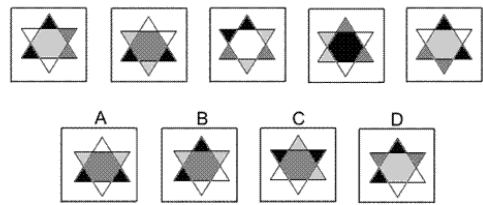
- (a) A
- (b) B
- (c) C
- (d) D

27.



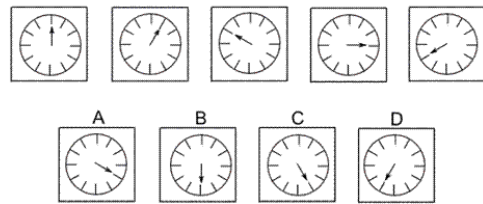
- (a) A
- (b) B
- (c) C
- (d) D

28.



- (a) A
- (b) B
- (c) C
- (d) D

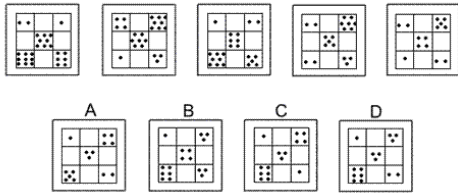
29.



- (a) A
- (b) B
- (c) C
- (d) D

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30.



- (a) A
- (b) B
- (c) C
- (d) D

In a study of 3,000 employed men in the 19-70 age range over a period of 10 years, researchers found that those working for inconsiderate bosses were more likely to suffer from stress and stress-related illness than those working for more considerate and enlightened bosses. Previous research had shown that employees with inconsiderate bosses suffered from high blood pressure which is known to increase the risk of heart disease. In the latest survey the researchers asked employees to assess the competence of their bosses as leaders. They found that those who had categorised their boss as incompetent were 25% more at risk of serious heart disease and that this level of risk increased the longer they continued to work for the same boss. The statistics took into account external factors such as social class, educational background, lifestyle and any existing illness. The researchers recommended that should their findings be confirmed, managers should be given training to help them improve their working relationships.

31. Twenty five percent of the 3,000 men in the study group suffer stress due to inconsiderate bosses

- (a) True
- (b) False
- (c) Cannot say
- (d)

32. Managers should be given training to help them improve their working relationships

- (a) True
- (b) False
- (c) Cannot say
- (d)

33. There is a link between high risk rates of cardiac illness among employees that have incompetent bosses

- (a) True
- (b) False
- (c) Cannot say
- (d)

There are two studies referred to in the passage. The first study mentions inconsiderate bosses and high blood pressure as actual findings. The second study discusses incompetence and the risk of cardiac illness. However, it only discusses the employees' perception of their bosses as being incompetent – it makes no objective claim to have shown that the bosses were in fact incompetent. The European Space Agency (ESA) is the body which decides the scope and direction of European space initiatives. It is funded by its participating states, currently 18 in number. Each contributes according to its own economic power. The body controls the funding of existing activities such as the Planar rocket and space station projects but is also responsible for the initiation of new projects like a new generation of weather satellites. Some of the programmes are compulsory but others are not and member states are free to choose in which of the latter they will become involved. There is a direct correlation between the amount of money that a state agrees to invest in a programme and the amount of benefit it can expect in return through contracts awarded to its domestic space industry. ESA directors are keen to maintain a high level of funding from its member states even in times of global economic downturn. They believe that a longer term view is needed.

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34. Space industries in the larger ESA contributor member states get more work from the ESA than the smaller contributors

- (a) True
- (b) False
- (c) Cannot say
- (d)

35. Even in tough economic times, ESA directors wish to maintain a high level of work flowing through to the space industries of member states.

- (a) True
- (b) False
- (c) Cannot say
- (d)

36. Member states can choose to spend their money on the Planar rocket or new weather satellites

- (a) True
- (b) False
- (c) Cannot say
- (d)

37. 8 22 12 16 22 20 24

- (a) 28 32
- (b) 28 22
- (c) 22 28
- (d) 32 36

38. 6 20 8 14 10 8 12

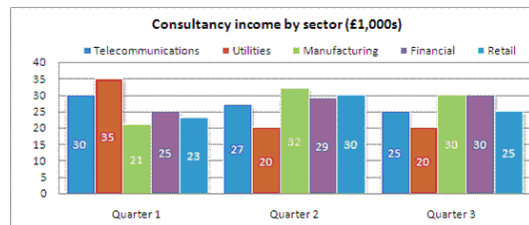
- (a) 14 10
- (b) 2 18
- (c) 4 12
- (d) 2 14

39. 11 16 21 26 31 36 41

- (a) 47 52
- (b) 46 52
- (c) 45 49
- (d) 46 51

40. 8 11 21 15 18 21 22

- (a) 25 18
- (b) 25 21
- (c) 25 29
- (d) 24 21



Manufacturing sector - Consultancy income by consultant

Consultant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
David	4,000	3,500	5,000	4,000
Peter	6,000	6,500	7,000	10,500
Sarah	6,000	9,000	5,500	3,000
Jane	4,000	4,500	7,500	4,500
Harry	1,000	4,500	5,000	6,500

41. Which sector experienced the highest sales for Quarters 1, 2 and 3 combined?

- (a) Telecommunications
- (b) Utilities
- (c) Manufacturing
- (d) Financial

42. Quarter 4's sales per sector are in the same ratio as Quarter 3, and the consultancy income from the Financial sector is £30,000. What is the consultancy income from the Utilities sector?

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(a) Can't tell from the data provided

(b) £12,000

(c) £20,000

(d) £25,000

43. For Quarters 1 and 3 combined, which two Manufacturing sector consultants had incomes in the ratio 2:3?

(a) Harry and David

(b) Sarah and Jane

(c) Harry and Jane

(d) David and Peter

44. The Manufacturing sector income from the five consultants is supplemented by the work of an associate consultant. What was the associate consultant's income from the Manufacturing sector across Quarters 1 to 3?

(a) £3,000

(b) £4,000

(c) £6,000

(d) £8,000

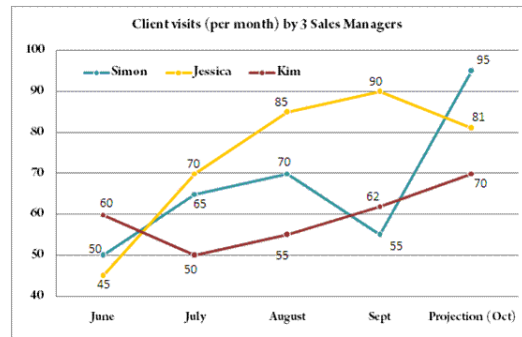
45. The total quarterly income target, starting with £115,000 for Quarter 1, increased by 20% for each subsequent Quarter. In Quarter 3 what was the difference between actual income and the target?

(a) £8,000 under-performance

(b) £18,400 under-performance

(c) £31,000 over-performance

(d) £35,600 under-performance



46. Simon and Jessica have travel allowances of 60p and 44p per mile respectively. Simon and Jessica each travel on average 25 miles and 30 miles respectively per sales visit. How much travel allowance is claimed in total by these 2 Sales Managers in August?

(a) £1,050

(b) £1,122

(c) £2,122

(d) £2,172

47. If the percentage change in sales visits between September and October (projected) continues for November, what will Jessica and Kim's number of sales visits be in November?

(a) 71 visits (Jessica); 77 visits (Kim)

(b) 71 visits (Jessica); 78 visits (Kim)

(c) 72 visits (Jessica); 78 visits (Kim)

(d) 73 visits (Jessica); 79 visits (Kim)

48. If the margin of error on October's projected client visits is +/- 15%, what are the ranges for each Sales Manager (rounded to the nearest whole visit)?

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(a) 90–100 (Simon); 77–85 (Jessica); 66–74 (Kim)

(b) 90–107 (Simon); 74–87 (Jessica); 64–76 (Kim)

(c) 81–109 (Simon); 73–89 (Jessica); 63–77 (Kim)

(d) 81–109 (Simon); 69–93 (Jessica); 60–81 (Kim)

49. Jessica, who travelled 3,500 miles in July, travelled an extra 10 miles per client visit compared to Simon. What was the total number of miles Simon travelled in July?

(a) 2,400

(b) 2,600

(c) 2,800

(d) 3,000

50. The average order value per client visit is £145, £135 and £125 for Simon, Jessica and Kim respectively. Which Sales Managers generate the highest and lowest order values in June?

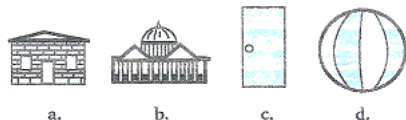
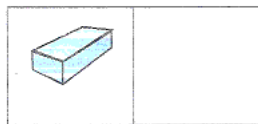
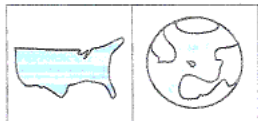
(a) Kim (most); Jessica (least)

(b) Simon (most); Jessica (least)

(c) Jessica (most); Kim (least)

(d) Jessica (most); Simon (least)

51.



(a) A

(b) B

(c) C

(d) D

52. ant fly bee
hamster squirrel _____

(a) spider

(b) mouse

(c) rodent

(d) cat

53. carpenter saw nails
pediatrician stethoscope _____

(a) thermometer

(b) baby

(c) doctor

(d) illness

54. table wood oak
shirt cloth _____

(a) sewing

(b) dress

(c) cotton

(d) tree

55. rule command dictate
doze sleep _____

(a) snore

(b) govern

(c) awaken

(d) hibernate

The logic problems 56 - 60 present you with three true statements: Fact 1, Fact 2, and Fact 3. Then, you are given three more statements (labeled I, II, and III), and you must determine which of these, if any, is also a fact. One or two of the statements could be true; all of the statements could be true; or none of the statements could be true. Choose your answer based solely on the information given in the first three facts.

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<p>56. Fact 1: Islands are surrounded by water. Fact 2: Maui is an island. Fact 3: Maui was formed by a volcano. If the first three statements are facts, which of the following statements must also be a fact? I. Maui is surrounded by water. II. All islands are formed by volcanoes. III. All volcanoes are on islands.</p> <p>(a) I only (b) III only (c) I and II only (d) None of the statements is a known fact</p> <p>57. Fact 1: All drink mixes are beverages. Fact 2: All beverages are drinkable. Fact 3: Some beverages are red. If the first three statements are facts, which of the following statements must also be a fact? I. Some drink mixes are red. II. All beverages are drink mixes. III. All red drink mixes are drinkable.</p> <p>(a) I only (b) II only (c) I and III (d) None of the statements is a known fact</p> <p>58. Fact 1: Eyeglass frames cost between \$35 and \$350. Fact 2: Some eyeglass frames are made of titanium. Fact 3: Some eyeglass frames are made of plastic. If the first three statements are facts, which of the following statements must also be a fact? I. Titanium eyeglass frames cost more than plastic frames. II. Expensive eyeglass frames last longer than cheap frames. III. Only a few eyeglass frames cost less than \$35.</p> <p>(a) II only (b) I and II only (c) II and III only (d) None of the statements is a known fact</p>	<p>59. Fact 1: Some pens don't write. Fact 2: All blue pens write. Fact 3: Some writing utensils are pens. If the first three statements are facts, which of the following statements must also be a fact? I. Some writing utensils don't write. II. Some writing utensils are blue. III. Some blue writing utensils don't write.</p> <p>(a) II only (b) I and II only (c) II and III only (d) None of the statements is a known fact</p> <p>60. Fact 1: Mary said, "Ann and I both have cats." Fact 2: Ann said, "I don't have a cat." Fact 3: Mary always tells the truth, but Ann sometimes lies. If the first three statements are facts, which of the following statements must also be a fact? I. Ann has a cat. II. Mary has a cat. III. Ann is lying.</p> <p>(a) II only (b) I and II only (c) I, II, and III (d) None of the statements is a known fact</p> <p>61. Find the x intercept of the graph of the equation. $2x - 4y = 9$</p> <p>(a) $3/2$ (b) $7/2$ (c) $9/2$ (d) $11/2$</p> <p>62. Evaluate $f(2) - f(1)$ if $f(x) = 6x + 1$</p> <p>(a) 4 (b) 5 (c) 6 (d) 7</p>
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63. Find the slope of the line passing through the points $(-1, -1)$ and $(2, 2)$.

- (a) $1/2$
- (b) 1
- (c) $3/2$
- (d) 2

64. Find the slope of the line

$$5x - 5y = 7$$

- (a) $1/2$
- (b) $3/4$
- (c) 1
- (d) $3/2$

65. Find the equation of the line that passes through the points $(-1, -1)$ and $(-1, 2)$.

- (a) $x = 1$
- (b) $y = -1$
- (c) $x = -1$
- (d) $x = -2$

66.

The chart shows the amount paid in bonuses to the employees of a certain firm.

Bonus paid to an employee (\$)	50	100	150	200
Number of employees	7	37	4	2

The average bonus per employee was

- (a) 81
- (b) 91
- (c) 100
- (d) 101

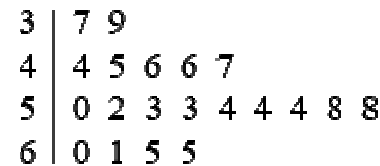
67. Refer to the chart from the previous question. If median bonus amount = m , mean bonus amount = n , and modal bonus amount = p , which of the following represents the correct ordering of m , n and p ?

- (a) $m < n < p$
- (b) $m < n = p$
- (c) $m = p < n$
- (d) $p < m < n$

68. Which of the following is the equation of a line passing through the origin and parallel to the line $2x - y = 5$?

- (a) $5x - y = 0$
- (b) $2x - y = 0$
- (c) $2x + y = 5$
- (d) $2x + y = 0$

69.



3 | 7 = 37 inches

The stem-and-leaf plot above gives the height, in inches, of evergreens in a nursery. What percent of the evergreens are over inches tall?

- (a) 20%
- (b) 25%
- (c) 30%
- (d) 40%

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70. A band wants to distribute its music on compact discs (CDs). The equipment to produce the CDs costs \$250, and blank CDs cost \$5.90 for a package of 10. Which of the following represents the total cost, in dollars, to produce n CDs, where n is a multiple of 10?

- (a) $(250+0.9)n$
- (b) $250+0.59n$
- (c) $(250+5.90)n$
- (d) $250+5.90n$

71. What is the probability, that a number selected from 1, 2, 3, --- 25, is a prime number, when each of the numbers is equally likely to be selected.

- (a) $7/25$
- (b) $8/25$
- (c) $9/25$
- (d) $2/5$

72. Two dice are thrown simultaneously. Find the probability of getting the same number on both dice

- (a) $1/3$
- (b) $1/4$
- (c) $1/5$
- (d) $1/6$

73. A region inside a semicircle of radius r is shaded. What is the area of the shaded region?

- (a) $1pr^2/4$
- (b) $1pr^2/3$
- (c) $1pr^2/2$
- (d) $2pr^2/3$

74. The average of 5, 10, 15, and x is 20. What is x ?

- (a) 20
- (b) 25

- (c) 45
- (d) 50

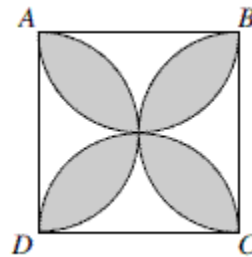
75. If 25% of 220 equals 5.5% of w , what is w ?

- (a) 10
- (b) 55
- (c) 100
- (d) 1000

76. A jar contains only red and blue marbles. The ratio of the number of red marbles to the number of blue marbles is 5:3. What percent of the marbles are blue?

- (a) 37.5%
- (b) 50%
- (c) 60%
- (d) 62.5%

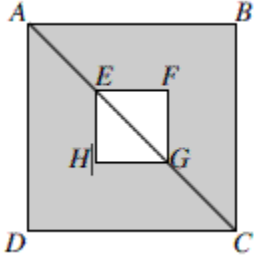
77. In the figure below, four semicircles are drawn, each centered at the midpoint of one of the sides of square ABCD. Each of the four shaded "petals" is the intersection of two of the semicircles. If $AB = 4$, what is the total area of the shaded region?



- (a) 8π
- (b) $32 - 8\pi$
- (c) $16 - 8\pi$
- (d) $8\pi - 16$

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78. In the figure below, diagonal EG of square EFGH is one-half of diagonal AD of square ABCD. What is the ratio of the area of the shaded region to the area of ABCD?



- (a) $\sqrt{2} : 1$
- (b) 3:4
- (c) $\sqrt{2} : 2$
- (d) 1:2

79. Jim receives a commission of 25¢ for every \$20.00 worth of merchandise he sells. What percent is his commission?

- (a) $1\frac{1}{4}\%$
- (b) $2\frac{1}{2}\%$
- (c) 5%
- (d) 25%

80. From 1990 to 2000, Michael's weight increased by 25%. If his weight was W kilograms in 2000, what was it in 1990?

- (a) 1.75 W
- (b) 1.25 W
- (c) 1.20 W
- (d) 0.80 W

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Answer Sheet

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	21	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	41	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	61	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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