

Model Test Paper 19  
General Study Paper II

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TEST BOOKLET  
GENERAL STUDIES  
Paper-II

C

Time Allowed : Two Hours

Maximum Marks : 200

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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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Virtually everything astronomers know about objects outside the solar system is based on the detection of photons—quanta of electromagnetic radiation. Yet there is another form of radiation that permeates the universe: neutrinos. With (as its name implies) no electric charge, and negligible mass, the neutrino interacts with other particles so rarely that a neutrino can cross the entire universe, even traversing substantial aggregations of matter, without being absorbed or even deflected. Neutrinos can thus escape from regions of space where light and other kinds of electromagnetic radiation are blocked by matter. Furthermore, neutrinos carry with them information about the site and circumstances of their production: therefore, the detection of cosmic neutrinos could provide new information about a wide variety of cosmic phenomena and about the history of the universe.

But how can scientists detect a particle that interacts so infrequently with other matter? Twenty-five years passed between Pauli's hypothesis that the neutrino existed and its actual detection: since then virtually all research with neutrinos has been with neutrinos created artificially in large particle accelerators and studied under neutrino microscopes. But a neutrino telescope, capable of detecting cosmic neutrinos, is difficult to construct. No apparatus can detect neutrinos unless it is extremely massive, because great mass is synonymous with huge numbers of nucleons (neutrons and protons), and the more massive the detector, the greater the probability of one of its nucleon's reacting with a neutrino. In addition, the apparatus must be sufficiently shielded from the interfering effects of other particles.

Fortunately, a group of astrophysicists has proposed a means of detecting cosmic neutrinos by harnessing the mass of the ocean. Named DUMAND, for Deep Underwater Muon and Neutrino Detector, the project calls for placing an array of light sensors at a depth of five kilometers under the ocean surface. The detecting medium is the seawater itself: when a neutrino interacts with a particle in an atom of seawater, the result is a cascade of electrically charged particles and a flash of light that can be detected by the sensors. The five kilometers of seawater above the sensors will shield them from the interfering effects of other high-energy particles raining down through the atmosphere.

The strongest motivation for the DUMAND project is that it will exploit an important source of information about the universe. The extension of astronomy from visible light to radio waves to x-rays and gamma rays never failed to lead to the discovery of unusual objects such as radio galaxies, quasars, and pulsars. Each of these

discoveries came as a surprise. Neutrino astronomy will doubtless bring its own share of surprises.

1. Which of the following titles best summarizes the passage as a whole?

- (a) At the Threshold of Neutrino Astronomy
- (b) Neutrinos and the History of the Universe
- (c) The Creation and Study of Neutrinos
- (d) The DUMAND System and How It Works

2. With which of the following statements regarding neutrino astronomy would the author be most likely to agree?

- (a) Neutrino astronomy will supersede all present forms of astronomy.
- (b) Neutrino astronomy will be abandoned if the DUMAND project fails.
- (c) Neutrino astronomy can be expected to lead to major breakthroughs in astronomy.
- (d) Neutrino astronomy will disclose phenomena that will be more surprising than past discoveries.

3. In the last paragraph, the author describes the development of astronomy in order to

- (a) suggest that the potential findings of neutrino astronomy can be seen as part of a series of astronomical successes
- (b) illustrate the role of surprise in scientific discovery
- (c) demonstrate the effectiveness of the DUMAND apparatus in detecting neutrinos
- (d) name some cosmic phenomena that neutrino astronomy will illuminate

4. According to the passage, one advantage that neutrinos have for studies in astronomy is that they

- (a) have been detected for the last twenty-five years
- (b) possess a variable electric charge
- (c) are usually extremely massive
- (d) carry information about their history with them

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<p>5. According to the passage, the primary use of the apparatus mentioned would be to</p> <p>(a) increase the mass of a neutrino</p> <p>(b) interpret the information neutrinos carry with them</p> <p>(c) detect the presence of cosmic neutrinos</p> <p>(d) see neutrinos in distant regions of space</p> <p>6. The passage states that interactions between neutrinos and other matter are</p> <p>(a) rare</p> <p>(b) artificial</p> <p>(c) undetectable</p> <p>(d) unpredictable</p> <p>7. The passage mentions which of the following as a reason that neutrinos are hard to detect?</p> <p>(a) Their pervasiveness in the universe</p> <p>(b) Their ability to escape from different regions of space</p> <p>(c) The infrequency of their interaction with other matter</p> <p>(d) The similarity of their structure to that of nucleons</p> <p>8. According to the passage, the interaction of a neutrino with other matter can produce</p> <p>(a) particles that are neutral and massive</p> <p>(b) a form of radiation that permeates the universe</p> <p>(c) inaccurate information about the site and circumstances of the neutrino's production</p> <p>(d) charged particles and light</p> <p>9. According to the passage, one of the methods used to establish the properties of neutrinos was</p> <p>(a) detection of photons</p> <p>(b) observation of the interaction of neutrinos with gamma rays</p>	<p>(c) observation of neutrinos that were artificially created</p> <p>(d) measurement of neutrinos that interacted with particles of seawater</p> <p>Most economists in the United States seem captivated by the spell of the free market. Consequently, nothing seems good or normal that does not accord with the requirements of the free market. A price that is determined by the seller or, for that matter, established by anyone other than the aggregate of consumers seems pernicious. Accordingly, it requires a major act of will to think of price-fixing (the determination of prices by the seller) as both "normal" and having a valuable economic function. In fact, price-fixing is normal in all industrialized societies because the industrial system itself provides, as an effortless consequence of its own development, the price-fixing that it requires. Modern industrial planning requires and rewards great size. Hence, a comparatively small number of large firms will be competing for the same group of consumers. That each large firm will act with consideration of its own needs and thus avoid selling its products for more than its competitors charge is commonly recognized by advocates of free-market economic theories. But each large firm will also act with full consideration of the needs that it has in common with the other large firms competing for the same customers. Each large firm will thus avoid significant price-cutting, because price-cutting would be prejudicial to the common interest in a stable demand for products. Most economists do not see price-fixing when it occurs because they expect it to be brought about by a number of explicit agreements among large firms; it is not. Moreover, those economists who argue that allowing the free market to operate without interference is the most efficient method of establishing prices have not considered the economies of non-socialist countries other than the United States. These economies employ intentional price-fixing, usually in an overt fashion. Formal price-fixing by cartel and informal price-fixing by agreements covering the members of an industry are commonplace. Were there something peculiarly efficient about the free market and inefficient about price-fixing, the countries that have avoided the first and used the second would have suffered drastically in their economic development. There is no indication that they have.</p> <p>Socialist industry also works within a framework of controlled prices. In the early 1970's, the Soviet Union began to give firms and industries some of the flexibility in adjusting prices that a more informal evolution has accorded the</p>
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<p>capitalist system. Economists in the United States have hailed the change as a return to the free market. But Soviet firms are no more subject to prices established by a free market over which they exercise little influence than are capitalist firms; rather, Soviet firms have been given the power to fix prices.</p> <p>10. The primary purpose of the passage is to</p> <p>(a) refute the theory that the free market plays a useful role in the development of industrialized societies</p> <p>(b) suggest methods by which economists and members of the government of the United States can recognize and combat price-fixing by large firms</p> <p>(c) argue that price-fixing, in one form or another, is an inevitable part of and benefit to the economy of any industrialized society</p> <p>(d) explain the various ways in which industrialized societies can fix prices in order to stabilize the free market</p> <p>11. The passage provides information that would answer which of the following questions about price-fixing?</p> <p>I. What are some of the ways in which prices can be fixed?</p> <p>II. For what products is price-fixing likely to be more profitable than the operation of the free market?</p> <p>III. Is price-fixing more common in socialist industrialized societies or in non-socialist industrialized societies?</p> <p>(a) I only</p> <p>(b) III only</p> <p>(c) I and II only</p> <p>(d) II and III only</p> <p>12. The author's attitude toward "Most economists in the United States" can best be described as</p> <p>(a) spiteful and envious</p> <p>(b) scornful and denunciatory</p> <p>(c) critical and condescending</p> <p>(d) ambivalent but deferential</p>	<p>13. It can be inferred from the author's argument that a price fixed by the seller "seems pernicious" because</p> <p>(a) people do not have confidence in large firms</p> <p>(b) people do not expect the government to regulate prices</p> <p>(c) most economists believe that consumers as a group should determine prices</p> <p>(d) most economists associate fixed prices with communist and socialist economies</p> <p>14. The suggestion in the passage that price-fixing in industrialized societies is normal arises from the author's statement that price-fixing is</p> <p>(a) a profitable result of economic development</p> <p>(b) an inevitable result of the industrial system</p> <p>(c) the result of a number of carefully organized decisions</p> <p>(d) a phenomenon common to industrialized and non-industrialized societies</p> <p>15. According to the author, price-fixing in non-socialist countries is often</p> <p>(a) accidental but productive</p> <p>(b) illegal but useful</p> <p>(c) legal and innovative</p> <p>(d) intentional and widespread</p> <p>16. According to the author, what is the result of the Soviet Union's change in economic policy in the 1970's?</p> <p>(a) Soviet firms show greater profit.</p> <p>(b) Soviet firms have less control over the free market.</p> <p>(c) Soviet firms are able to adjust to technological advances.</p> <p>(d) Soviet firms have some authority to fix prices.</p>
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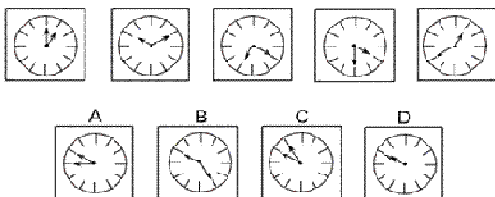
17. With which of the following statements regarding the behavior of large firms in industrialized societies would the author be most likely to agree?

- (a) The directors of large firms will continue to anticipate the demand for products.
- (b) The directors of large firms are less interested in achieving a predictable level of profit than in achieving a large profit.
- (c) The directors of large firms will strive to reduce the costs of their products.
- (d) Many directors of large firms believe that the government should establish the prices that will be charged for products.

18. In the passage, the author is primarily concerned with

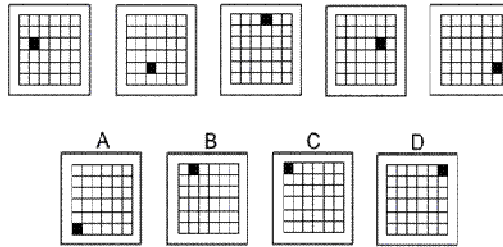
- (a) predicting the consequences of a practice
- (b) criticizing a point of view
- (c) calling attention to recent discoveries
- (d) proposing a topic for research

19.



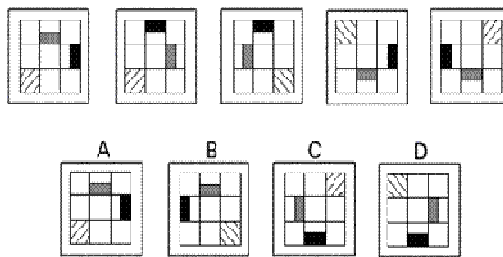
- (a) A
- (b) B
- (c) C
- (d) D

20.



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

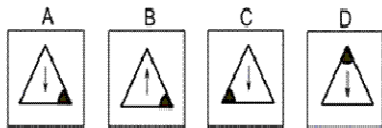
21.



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

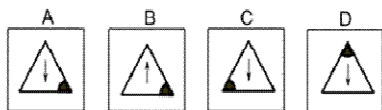
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22.



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

23.



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

Year	Output (millions of tonnes)	Manpower (thousands)	Output/Manpower
1994-1995	29	15	1.933
1995-1996	35.2	15.1	2.331
1996-1997	32.1	13.9	2.309
1997-1998	28.1	11.2	2.509
1998-1999	23.8	9.8	2.429
1999-2000	19.6	8.2	2.39
2000-2001	17.4	8.6	2.023
2001-2002	18.1	8.1	2.235
2002-2003	15.8	6.6	2.394
2003-2004	14.7	6.1	2.41
2004-2005	11.5	4.6	2.5
2005-2006	10.3	4.1	2.512
2006-2007	8.2	3.6	2.278

24. Which year showed an increase in production but with a lesser manpower compared with the previous year?

- (a) 1997-1998
- (b) 2000-2001
- (c) 2001-2002
- (d) 2005-2006

25. Which year showed the greatest decrease in manpower compared with the previous year?

- (a) 1996-1997
- (b) 1997-1998
- (c) 1998-1999
- (d) 2002-2003

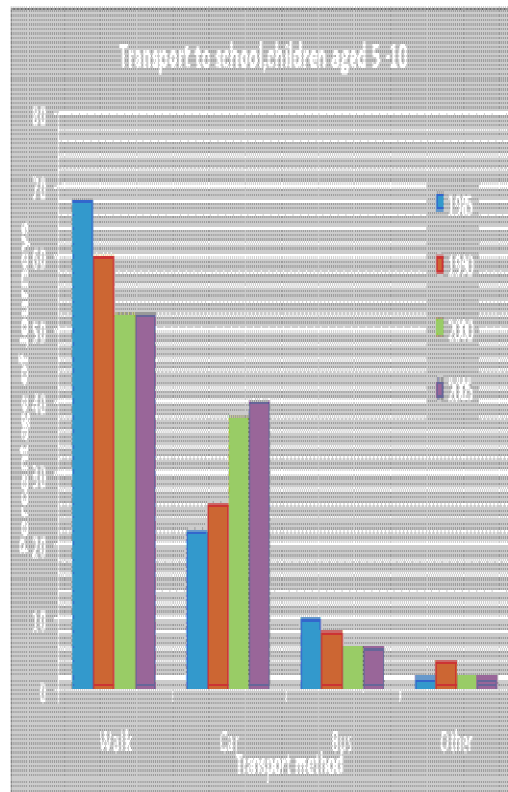
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26. Which year showed the greatest production per man?

- (a) 1997-1998
- (b) 2000-2001
- (c) 2004-2005
- (d) 2005-2006

27. What was the output in 2006-2007 as a percentage of the output in 1996-1997?

- (a) 25.5%
- (b) 25.9%
- (c) 28.3%
- (d) 32.1%



28. What was the difference between share of car journeys in 1985 and share of car journeys in 2005?

- (a) 82%
- (b) 41%
- (c) 21%
- (d) 18%

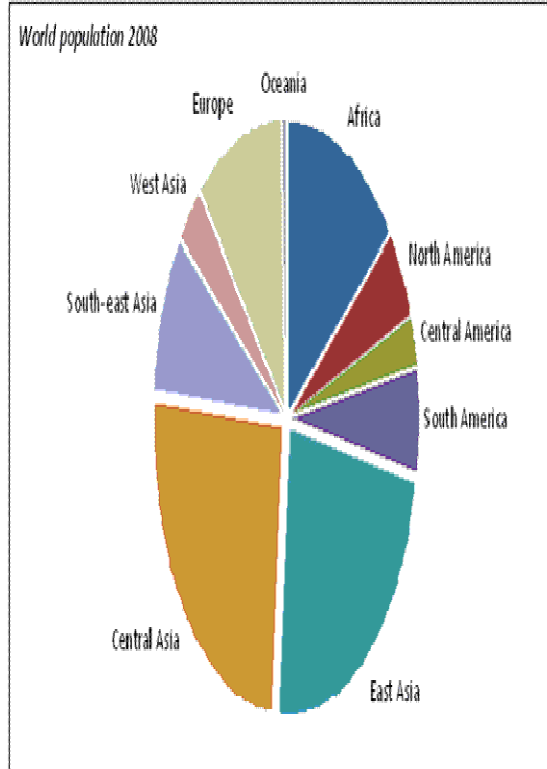
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29. If the percentage of children aged 5 – 10 walking to school over the 20 year period 2005 to 2025 drops by the same amount as it did between 1985 and 2005, what percentage of children will walk to school in 2025?

- (a) 36%
- (b) 41%
- (c) 50%
- (d) 51%

30. The number of primary school journeys made in 2005 was 4.5 million. Approximately how many of these journeys were made by bus?

- (a) 450,000
- (b) 405,000
- (c) 315,000
- (d) 270,000



31. In which continent or subcontinent did approximately 23% of the world's population live in 2008?

- (a) Africa
- (b) America
- (c) Central Asia
- (d) East Asia



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32. In 2008, approximately what fraction of the world's population lived in the Americas?

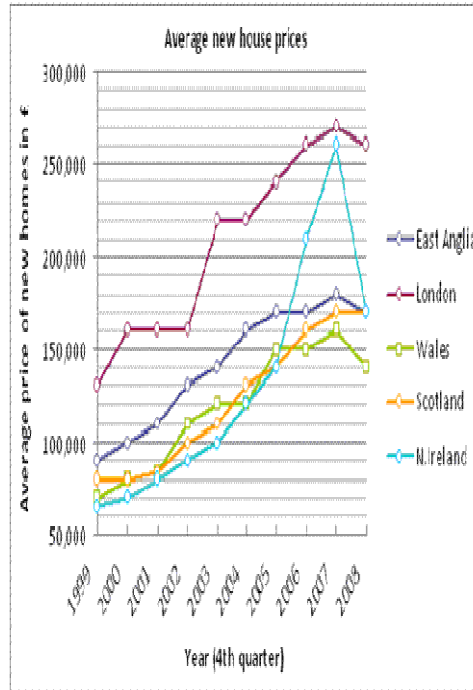
- (a) 1/4
- (b) 1/5
- (c) 1/7
- (d) 1/9

33. The total world population in 2008 was estimated to be 6,707 million. Approximately how many people lived in Europe?

- (a) 560 million
- (b) 745 million
- (c) 932 million
- (d) 1,179 million

34. The current population growth rate for Africa is estimated to be 2.4% per annum and the population of Africa in 2008 was estimated to be 967 million. If the current growth rate is maintained, in which year will the population of Africa exceed 1.1 billion?

- (a) 2012
- (b) 2013
- (c) 2014
- (d) 2015



35. Which region has shown the greatest range in its average new house prices over the ten year period?

- (a) London
- (b) Wales
- (c) Scotland
- (d) N. Ireland

36. Which region has shown the least percentage increase in its average new house prices over the ten year period?

- (a) East Anglia
- (b) London
- (c) Wales
- (d) Scotland

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37. If the average London house price continues to fall at the same rate as it did between the last quarter of 2007 and the last quarter of 2008, in what year would the average house price in London revert to their 2003-2004 levels?

- (a) 2009
- (b) 2010
- (c) 2013
- (d) 2015

Answer questions 38 through 40 on the basis of the information below.

Henri delivers flowers for a local florist. One lovely day, he left the windows open on the delivery van and the cards all blew off the bouquets. He has to figure out who gets which flowers. He has five bouquets, each of which has only one kind of flower: daisies, roses, carnations, iris, and gladioli. He has five cards with names on them: a birthday card for Inez, a congratulations-on-your-promotion card for Jenny, a graduation card for Kevin, an anniversary card for Liz, and a housewarming card for Michael. Here's what Henri knows:

Roses are Jenny's favorite flower and what her friends always send.

Gladioli are traditionally sent for a housewarming.

Kevin is allergic to daisies and iris.

Liz is allergic to daisies and roses.

Neither Liz nor Inez has moved recently.

38. Which flowers should be delivered to Kevin?

- (a) carnations
- (b) iris
- (c) gladioli
- (d) daisies

39. Who should get the housewarming gladioli?

- (a) Jenny
- (b) Kevin
- (c) Liz
- (d) Michael

40. Which flowers should be delivered to Liz?

- (a) gladioli
- (b) daisies
- (c) roses
- (d) iris

Answer questions 41 through 44 on the basis of the information below.

Eleanor is in charge of seating the speakers at a table. In addition to the moderator, there will be a pilot, a writer, an attorney, and an explorer. The speakers' names are Gary, Heloise, Jarrod, Kate, and Lane.

The moderator must sit in the middle, in seat #3.

The attorney cannot sit next to the explorer.

Lane is the pilot.

The writer and the attorney sit on either side of the moderator.

Heloise, who is not the moderator, sits between Kate and Jarrod.

The moderator does not sit next to Jarrod or Lane.

Gary, who is the attorney, sits in seat #4.

41. Who is the moderator?

- (a) Lane
- (b) Gary
- (c) Heloise
- (d) Kate

42. Where does Jarrod sit?

- (a) seat #1
- (b) seat #2
- (c) seat #3
- (d) seat #4

43. What occupation does Jarrod hold?

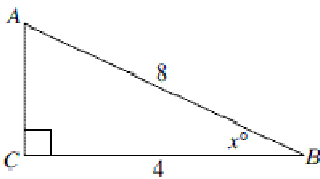
- (a) a moderator
- (b) a pilot
- (c) a writer
- (d) an explorer

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<p>44. Who is the writer?</p> <p>(a) Gary (b) Heloise (c) Jarrod (d) Kate</p> <p>Answer question 45 on the basis of the information below.</p> <p>Zinnia has a small container garden on her balcony. Each spring, she only has room to plant three vegetables. Because five vegetables are her favorites, she has worked out a schedule to plant each at least once every two years. The vegetables are: beans, cabbage, carrots, peppers, and tomatoes.</p> <p>Tomatoes are her favorites and she plants them every year. Each year, she plants only one vegetable that begins with the letter "C." She never plants carrots and peppers in the same year. She will plant cabbage in the second year.</p> <p>45. In what order does she plant the vegetables in the next two years?</p> <p>(a) first year: tomatoes, carrots, cabbage second year: tomatoes, peppers, beans (b) first year: tomatoes, peppers, beans second year: cabbage, carrots, tomatoes (c) first year: tomatoes, carrots, peppers second year: tomatoes, cabbage, beans (d) first year: tomatoes, carrots, beans second year: tomatoes, cabbage, peppers</p> <p>Answer questions 46 through 50 on the basis of the information below.</p> <p>Five roommates—Randy, Sally, Terry, Uma, and Vernon—each do one housekeeping task—mopping, sweeping, laundry, vacuuming, or dusting—one day a week, Monday through Friday.</p> <p>Vernon does not vacuum and does not do his task on Tuesday. Sally does the dusting, and does not do it on Monday or Friday. The mopping is done on Thursday. Terry does his task, which is not vacuuming, on Wednesday.</p>	<p>The laundry is done on Friday, and not by Uma. Randy does his task on Monday.</p> <p>46. When does Sally do the dusting?</p> <p>(a) Friday (b) Monday (c) Tuesday (d) Wednesday</p> <p>47. What task does Terry do on Wednesday?</p> <p>(a) vacuuming (b) dusting (c) mopping (d) sweeping</p> <p>48. What day is the vacuuming done?</p> <p>(a) Friday (b) Monday (c) Tuesday (d) Wednesday</p> <p>49. What task does Vernon do?</p> <p>(a) vacuuming (b) dusting (c) mopping (d) laundry</p> <p>50. What day does Uma do her task?</p> <p>(a) Monday (b) Tuesday (c) Wednesday (d) Thursday</p>
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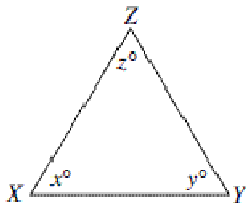
51. In triangle ACB, what is the value of  $x$ ?



Note: Figure not drawn to scale

- (a) 75
- (b) 60
- (c) 45
- (d) 30

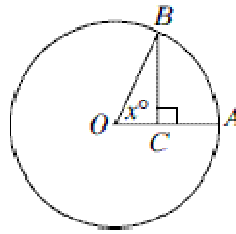
52. In triangle XYZ at the right, if  $XY < YZ < ZX$ , then which of the following must be true?



Note: Figure not drawn to scale

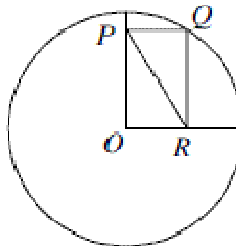
- (a)  $x < 60$
- (b)  $z < 60$
- (c)  $y < z$
- (d)  $x < z$

53. In the figure below, O is the center of the circle. If  $OA = 4$  and  $BC = 2$ , what is the value of  $x$ ?



- (a) 15
- (b) 25
- (c) 30
- (d) 45

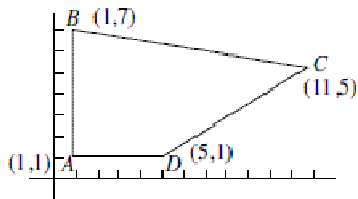
54. In the figure below, Q is a point on the circle whose center is O and whose radius is  $r$ , and OPQR is a rectangle. What is the length of diagonal PR?



- (a)  $r$
- (b)  $r^2$
- (c)  $r^2/p$
- (d)  $r^2/2p$

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55. What is the area of quadrilateral ABCD?



- (a) 30
- (b) 34
- (c) 38
- (d) 42

The United Nations was established in 1945 and today includes nearly every recognized state, each of which has one vote in the General Assembly. The United Nations' Security Council, charged with maintaining international peace and security, is comprised of five permanent members (the P5) – the United States, the United Kingdom, France, China and Russia – as well as ten non-permanent members, elected for two-year terms. The Security Council approves decisions based on an affirmative vote from at least nine of its fifteen members, however each of the five permanent members has veto power. The P5's veto power is widely criticized as unfair and anachronistic. In the Cold War era, the P5 were the world's only nuclear powers, and the veto both recognized their might and provided incentive for them to support the Security Council's goals. Nuclear proliferation, however, means that the P5 no longer reflects today's geopolitical realities. Opponents of the veto believe it is used to promote national agendas at the expense of international security. Alternatively, rather than abolish the veto, some commentators suggest that the veto should be extended to more countries – for example, Germany.

56. The P5 were granted veto power in recognition of their disproportionate contribution to global security

- (a) True
- (b) False

(c) Cannot say

(d)

57. Some critics argue that veto power is subject to individual interests

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

58. The passage asserts that some people believe that the veto should be granted to all countries with nuclear arsenals

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

59. The United Nations' Security Council was set up in 1945, with the objective of avoiding another world war

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

60. The P5 cannot wield their veto if a resolution is backed by at least nine members of the Security Council

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

**Model Test Paper 19**  
**General Study Paper II**

<p>The merits of single-sex education have long been debated in the United States, where demand for single-sex schools is on the rise. Title IV, a 1972 law prohibiting sex discrimination in education, was amended in 2006, allowing for the establishment of single-sex state schools so long as a coeducational alternative is available. While critics view single-sex schools as discriminatory and inadequate preparation for adult life, advocates claim that children, and particularly girls, benefit from a single-sex education. American research shows that girls attending single-sex schools have higher self-esteem, participate more in class, and score higher on aptitude tests than their counterparts in co-educational schools. A 2005 study revealed that both girls and boys attending single-sex schools spent more time on homework and had less disciplinary problems. Single-sex schools also subvert stereotypical course-taking patterns and results. Advocates of single-sex schooling argue that educators can teach more effectively by tailoring their tuition to reflect current research about gender-based brain development. Many experts, however, believe that research into single-sex education is inconclusive, and that so long as the education provided is gender-fair, both girls and boys can thrive in a co-educational environment.</p> <p>61. Girls who attend single-sex schools perform better in maths and sciences than their counterparts in co-educational schools</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>62. The trend towards American single-sex state education is a relatively recent phenomenon</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>63. Proponents of single-sex education acknowledge different learning styles between the two genders</p> <p>(a) True</p>	<p>(b) False (c) Cannot say (d)</p> <p>64. Whereas girls benefit academically from single-sex education, the only advantage for boys is improved discipline</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>65. Critics of single-sex education believe that such schools reinforce pre-existing gender stereotypes</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>66. Two six-sided dice are rolled. Find the probability that the first die is not a 5, given that the second die is not a 2.</p> <p>(a) <math>\frac{2}{3}</math> (b) <math>\frac{29}{36}</math> (c) <math>\frac{25}{36}</math> (d) <math>\frac{5}{6}</math></p> <p>67. Two six-sided dice are rolled. But this time, the dice aren't fair: For each die, a 1 is twice as likely to be rolled as a 2, a 2 is twice as likely to be rolled as a 3, ..., and a 5 is twice as likely to be rolled as a 6 (in other words, each number is twice as likely as the number that follows it). So what is the probability of rolling a sum of 7?</p> <p>(a) <math>\frac{64}{1023}</math> (b) <math>\frac{64}{1223}</math> (c) <math>\frac{64}{1323}</math> (d) <math>\frac{64}{1123}</math></p>
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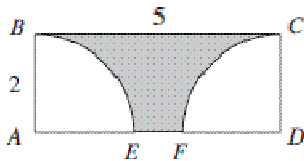
<p>68. There is a carnival game that requires you to roll two standard 6-sided dice. If the sum of the dice rolls is a prime number, then you win. What is the probability of winning?</p> <p>(a) 5/12 (b) 17/36 (c) 4/9 (d) 1/2</p> <p>69. There is a standard 52-card deck. If you draw three cards randomly, what is the probability that all three cards are spades?</p> <p>(a) 23 out of 1,988 (b) 39 out of 140,608 (c) 11 out of 850 (d) 1 out of 64</p> <p>70. A casino game costs \$5 to play where you roll two dice. If the sum of the dice rolls is 7, you win \$21. If the sum of the dice rolls is not 7, then you lose and get nothing. If you keep playing and stop when you win, what are the odds you will have made money?</p> <p>(a) 3750/7776 (b) 4651/7776 (c) 3125/7776 (d) 4105/7776</p> <p>71. PSYCHOLOGIST : NEUROSIS</p> <p>(a) ophthalmologist : cataract (b) dermatologist : fracture (c) infant : pediatrician (d) rash : orthopedist</p> <p>72. BINDING : BOOK</p> <p>(a) criminal : gang (b) display : museum</p>	<p>(c) artist : carpenter (d) frame : picture</p> <p>73. EXPLORE : DISCOVER</p> <p>(a) read : skim (b) research : learn (c) write : print (d) think : relate</p> <p>74. COTTON : BALE</p> <p>(a) butter : churn (b) wine : ferment (c) grain : shock (d) curd : cheese</p> <p>75. DIVISION : SECTION</p> <p>(a) layer : tier (b) tether : bundle (c) chapter : verse (d) riser : stage</p> <p>76. The average of 10 numbers is -10. If the sum of six of them is 100, what is the average of the other four?</p> <p>(a) -100 (b) -50 (c) 0 (d) 50</p> <p>77. What is 3% of 4%?</p> <p>(a) 0.07% (b) 0.12% (c) 1.2% (d) 7%</p>
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78. If  $f(x) = 4x^2 + 2x^4$ , what is the value of  $f(-2)$ ?

- (a) -48
- (b) -32
- (c) 0
- (d) 48

79. In the figure below, ABCD is a rectangle, and BE and CF are arcs of circles centered at A and D. What is the area of the shaded region?



- (a)  $10 - \pi$
- (b)  $2(5 - \pi)$
- (c)  $2(5 - 2\pi)$
- (d)  $6 + 2\pi$

80. If  $5(3x - 7) = 20$ , what is  $3x - 8$ ?

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



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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"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	22	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	42	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	62	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	23	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	43	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	63	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	64	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	25	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	45	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	65	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	26	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	46	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	66	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	27	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	47	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	67	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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13	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	33	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	53	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	73	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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17	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	37	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	57	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	77	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	79	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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