

Model Test Paper 3  
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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<p>In most earthquakes the Earth's crust cracks like porcelain. Stress builds up until a fracture forms at a depth of a few kilometers and the crust slips to relieve the stress. Some earthquakes, however, take place hundreds of kilometers down in the Earth's mantle, where high pressure makes rock so ductile that it flows instead of cracking, even under stress severe enough to deform it like putty. How can there be earthquakes at such depths? That such deep events do occur has been accepted only since 1927, when the seismologist Kiyoo Wadati convincingly demonstrated their existence. Instead of comparing the arrival times of seismic waves at different locations, as earlier researchers had done, Wadati relied on a time difference between the arrival of primary (P) waves and the slower secondary (S) waves. Because P and S waves travel at different but fairly constant speeds, the interval between their arrivals increases in proportion to the distance from the earthquake focus, or rupture point.</p> <p>For most earthquakes, Wadati discovered, the interval was quite short near the epicenter, the point on the surface where shaking is strongest. For a few events, however, the delay was long even at the epicenter. Wadati saw a similar pattern when he analyzed data on the intensity of shaking. Most earthquakes had a small area of intense shaking, which weakened rapidly with increasing distance from the epicenter, but others were characterized by a lower peak intensity, felt over a broader area. Both the P-S intervals and the intensity patterns suggested two kinds of earthquakes: the more common shallow events, in which the focus lay just under the epicenter, and deep events, with a focus several hundred kilometers down.</p> <p>The question remained: how can such quakes occur, given that mantle rock at a depth of more than 50 kilometers is too ductile to store enough stress to fracture? Wadati's work suggested that deep events occur in areas (now called Wadati-Benioff zones) where one crustal plate is forced under another and descends into the mantle. The descending rock is substantially cooler than the surrounding mantle and hence is less ductile and much more liable to fracture.</p> <p>1. The passage is primarily concerned with</p> <p>(a) demonstrating why the methods of early seismologists were flawed</p> <p>(b) arguing that deep events are poorly understood and deserve further study</p> <p>(c) defending a revolutionary theory about the causes of earthquakes and methods of predicting them</p>	<p>(d) discussing evidence for the existence of deep events and the conditions that allow them to occur</p> <p>2. The author uses the comparisons to porcelain and putty in order to</p> <p>(a) explain why the Earth's mantle is under great pressure</p> <p>(b) distinguish the earthquake's epicenter from its focus</p> <p>(c) demonstrate the conditions under which a Wadati-Benioff zone forms</p> <p>(d) illustrate why the crust will fracture but the mantle will not</p> <p>3. It can be inferred from the passage that if the S waves from an earthquake arrive at a given location long after the P waves, which of the following must be true?</p> <p>(a) The earthquake was a deep event.</p> <p>(b) The earthquake was a shallow event.</p> <p>(c) The earthquake focus was distant.</p> <p>(d) The earthquake focus was nearby.</p> <p>4. The method used by Wadati to determine the depths of earthquakes is most like which of the following?</p> <p>(a) Determining the depth of a well by dropping stones into the well and timing how long they take to reach the bottom</p> <p>(b) Determining the height of a mountain by measuring the shadow it casts at different times of the day</p> <p>(c) Determining the distance from a thunderstorm by timing the interval between the flash of a lightning bolt and the thunder it produces</p> <p>(d) Determining the distance between two points by counting the number of paces it takes to cover the distance and measuring a single pace</p> <p>5. The passage supports which of the following statements about the relationship between the epicenter and the focus of an earthquake?</p> <p>(a) P waves originate at the focus and S waves originate at the epicenter.</p>
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<p>(b) In deep events the epicenter and the focus are reversed.</p> <p>(c) In shallow events the epicenter and the focus coincide.</p> <p>(d) In both deep and shallow events the focus lies beneath the epicenter.</p> <p>6. The passage suggests that which of the following must take place in order for any earthquake to occur?</p> <p>I. Stress must build up. II. Cool rock must descend into the mantle. III. A fracture must occur.</p> <p>(a) I only (b) II only (c) III only (d) I and III only</p> <p>7. Information presented in the passage suggests that, compared with seismic activity at the epicenter of a shallow event, seismic activity at the epicenter of a deep event is characterized by</p> <p>(a) shorter P-S intervals and higher peak intensity (b) shorter P-S intervals and lower peak intensity (c) longer P-S intervals and similar peak intensity (d) longer P-S intervals and lower peak intensity</p> <p>8. The passage suggests which of the following about the views held by researchers before 1927?</p> <p>(a) Some researchers did not believe that deep events could actually occur. (b) Many researchers rejected the use of P-S intervals for determining the depths of earthquakes. (c) Some researchers doubted that the mantle was too ductile to store the stress needed for an earthquake. (d) Most researchers expected P waves to be slower than S waves.</p> <p>9. The author's explanation of how deep events occur would be most weakened if which of the following were discovered to be true?</p>	<p>(a) Deep events are far less common than shallow events.</p> <p>(b) Deep events occur in places other than where crustal plates meet.</p> <p>(c) Mantle rock is more ductile at a depth of several hundred kilometers than it is at 50 kilometers.</p> <p>(d) The speeds of both P and S waves are slightly greater than previously thought.</p> <p>Neotropical coastal mangrove forests are usually "zonal," with certain mangrove species found predominantly in the seaward portion of the habitat and other mangrove species on the more landward portions of the coast. The earliest research on mangrove forests produced descriptions of species distribution from shore to land, without exploring the causes of the distributions. The idea that zonation is caused by plant succession was first expressed by J. H. Davis in a study of Florida mangrove forests. According to Davis' scheme, the shoreline is being extended in a seaward direction because of the "land-building" role of mangroves, which, by trapping sediments over time, extend the shore. As a habitat gradually becomes more inland as the shore extends, the "land-building" species are replaced. This continuous process of accretion and succession would be interrupted only by hurricanes or storm flushings.</p> <p>Recently the universal application of Davis' succession paradigm has been challenged. It appears that in areas where weak currents and weak tidal energies allow the accumulation of sediments, mangroves will follow land formation and accelerate the rate of soil accretion; succession will proceed according to Davis' scheme. But on stable coastlines, the distribution of mangrove species results in other patterns of zonation; "land building" does not occur.</p> <p>To find a principle that explains the various distribution patterns, several researchers have looked to salinity and its effects on mangrove. While mangroves can develop in fresh water, they can also thrive in salinities as high as 2.5 times that of seawater. However, those mangrove species found in freshwater habitats do well only in the absence of competition, thus suggesting that salinity tolerance is a critical factor in competitive success among mangrove species. Research suggests that mangroves will normally dominate highly saline regions, although not because they require salt. Rather, they are metabolically</p>
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<p>efficient (and hence grow well) in portions of an environment whose high salinity excludes plants adapted to lower salinities. Tides create different degrees of salinity along a coastline. The characteristic mangrove species of each zone should exhibit a higher metabolic efficiency at that salinity than will any potential invader, including other species of mangrove.</p> <p>10. The primary of the purpose of the passage is to</p> <p>(a) refute the idea that the zonation exhibited in mangrove forests is caused by adaptation to salinity</p> <p>(b) describe the pattern of zonation typically found in Florida mangrove forests</p> <p>(c) argue that Davis' succession paradigm cannot be successfully applied to Florida mangrove forests</p> <p>(d) discuss hypotheses that attempt to explain the zonation of coastal mangrove forests</p> <p>11. According to the passage, the earliest research on mangrove forest produced which of the following?</p> <p>(a) Data that implied random patterns of mangrove species distribution</p> <p>(b) Descriptions of species distributions suggesting zonation</p> <p>(c) Descriptions of the development of mangrove forests over time</p> <p>(d) Reclassification of species formerly thought to be identical</p> <p>12. It can be inferred from the passage that Davis' paradigm does NOT apply to which of the following?</p> <p>(a) The shoreline of Florida mangrove forests first studies by Davis</p> <p>(b) A shoreline in which few sediments can accumulate</p> <p>(c) A shoreline in an area with weak tidal energy</p> <p>(d) A shoreline extended by "land-building" species of mangrove</p> <p>13. Information in the passage indicates that the author would most probably regard which of following statements as INCORRECT?</p>	<p>(a) Coastal mangrove forests are usually zonal.</p> <p>(b) Hurricanes interrupt the process of accretion and succession that extends existing shorelines.</p> <p>(c) Species of plants that thrive in a saline habitat require salt to flourish.</p> <p>(d) Plants with the highest metabolic efficiency in a given habitat tend to exclude other plants from that habitat.</p> <p>14. The tone of the passage can best be described as</p> <p>(a) flippant</p> <p>(b) aggressive</p> <p>(c) objective</p> <p>(d) apologetic</p> <p>The fossil remains of the first flying vertebrates, the pterosaurs, have intrigued paleontologists for more than two centuries. How such large creatures, which weighed in some cases as much as a piloted hang-glider and had wingspans from 8 to 12 meters, solved the problems of powered flight, and exactly what these creatures were—reptiles or birds—are among the questions scientists have puzzled over.</p> <p>Perhaps the least controversial assertion about the pterosaurs is that they were reptiles. Their skulls, pelvises, and hind feet are reptilian. The anatomy of their wings suggests that they did not evolve into the class of birds. In pterosaurs a greatly elongated fourth finger of each forelimb supported a wing-like membrane. The other fingers were short and reptilian, with sharp claws. In birds the second finger is the principal strut of the wing, which consists primarily of feathers. If the pterosaurs walked on all fours, the three short fingers may have been employed for grasping. When a pterosaur walked or remained stationary, the fourth finger, and with it the wing, could only turn upward in an extended inverted V-shape along each side of the animal's body.</p> <p>The pterosaurs resembled both birds and bats in their overall structure and proportions. This is not surprising because the design of any flying vertebrate is subject to aerodynamic constraints. Both the pterosaurs and the birds have hollow bones, a feature that represents a savings in weight. In the birds, however, these bones are reinforced more massively by internal struts.</p>
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<p>Although scales typically cover reptiles, the pterosaurs probably had hairy coats. T. H. Huxley reasoned that flying vertebrates must have been warm-blooded because flying implies a high rate of metabolism, which in turn implies a high internal temperature. Huxley speculated that a coat of hair would insulate against loss of body heat and might streamline the body to reduce drag in flight. The recent discovery of a pterosaur specimen covered in long, dense, and relatively thick hairlike fossil material was the first clear evidence that his reasoning was correct.</p> <p>Efforts to explain how the pterosaurs became airborne have led to suggestions that they launched themselves by jumping from cliffs, by dropping from trees, or even by rising into light winds from the crests of waves. Each hypothesis has its difficulties. The first wrongly assumes that the pterosaurs' hind feet resembled a bat's and could serve as hooks by which the animal could hang in preparation for flight. The second hypothesis seems unlikely because large pterosaurs could not have landed in trees without damaging their wings. The third calls for high waves to channel updrafts. The wind that made such waves however, might have been too strong for the pterosaurs to control their flight once airborne.</p> <p>15. It can be inferred from the passage that scientists now generally agree that the</p> <p>(a) enormous wingspan of the pterosaurs enabled them to fly great distances</p> <p>(b) structure of the skeleton of the pterosaurs suggests a close evolutionary relationship to bats</p> <p>(c) fossil remains of the pterosaurs reveal how they solved the problem of powered flight</p> <p>(d) pterosaurs were reptiles</p> <p>16. The author views the idea that the pterosaurs became airborne by rising into light winds created by waves as</p> <p>(a) revolutionary</p> <p>(b) unlikely</p> <p>(c) unassailable</p> <p>(d) probable</p> <p>17. According to the passage, the skeleton of a pterosaur can be distinguished from that of a bird by the</p>	<p>(a) size of its wingspan</p> <p>(b) presence of hollow spaces in its bones</p> <p>(c) anatomic origin of its wing strut</p> <p>(d) presence of hooklike projections on its hind feet</p> <p>18. The ideas attributed to T. H. Huxley in the passage suggest that he would most likely agree with which of the following statements?</p> <p>(a) An animal's brain size has little bearing on its ability to master complex behaviors.</p> <p>(b) An animal's appearance is often influenced by environmental requirements and physical capabilities.</p> <p>(c) Animals within a given family group are unlikely to change their appearance dramatically over a period of time.</p> <p>(d) The origin of flight in vertebrates was an accidental development rather than the outcome of specialization or adaptation.</p> <p>19. It can be inferred from the passage that which of the following is characteristic of the pterosaurs?</p> <p>(a) They were unable to fold their wings when not in use.</p> <p>(b) They hung upside down from branches as bats do before flight.</p> <p>(c) They flew in order to capture prey.</p> <p>(d) They were an early stage in the evolution of the birds.</p> <p>20. Which of the following best describes the organization of the last paragraph of the passage?</p> <p>(a) New evidence is introduced to support a traditional point of view.</p> <p>(b) Three explanations for a phenomenon are presented, and each is disputed by means of specific information.</p> <p>(c) Three hypotheses are outlined, and evidence supporting each is given.</p> <p>(d) Recent discoveries are described, and their implications for future study are projected.</p>
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<p>21. It can be inferred from the passage that some scientists believe that pterosaurs</p> <ul style="list-style-type: none"><li>(a) lived near large bodies of water</li><li>(b) had sharp teeth for tearing food</li><li>(c) were attacked and eaten by larger reptiles</li><li>(d) had longer tails than many birds</li></ul> <p>How many really suffer as a result of labor market problems? This is one of the most critical yet contentious social policy questions. In many ways, our social statistics exaggerate the degree of hardship. Unemployment does not have the same dire consequences today as it did in the 1930's when most of the unemployed were primary breadwinners, when income and earnings were usually much closer to the margin of subsistence, and when there were no countervailing social programs for those failing in the labor market. Increasing affluence, the rise of families with more than one wage earner, the growing predominance of secondary earners among the unemployed, and improved social welfare protection have unquestionably mitigated the consequences of joblessness. Earnings and income data also overstate the dimensions of hardship. Among the millions with hourly earnings at or below the minimum wage level, the overwhelming majority are from multiple-earner, relatively affluent families. Most of those counted by the poverty statistics are elderly or handicapped or have family responsibilities which keep them out of the labor force, so the poverty statistics are by no means an accurate indicator of labor market pathologies. Yet there are also many ways our social statistics underestimate the degree of labor-market-related hardship. The unemployment counts exclude the millions of fully employed workers whose wages are so low that their families remain in poverty. Low wages and repeated or prolonged unemployment frequently interact to undermine the capacity for self-support. Since the number experiencing joblessness at some time during the year is several times the number unemployed in any month, those who suffer as a result of forced idleness can equal or exceed average annual unemployment, even though only a minority of the jobless in any month really suffer. For every person counted in the monthly unemployment tallies, there is another working part-time because of the inability to find full-time work, or else outside the labor force but wanting a job. Finally, income transfers in our country have always focused on the elderly, disabled, and dependent, neglecting the needs of the working poor, so that the</p>	<p>dramatic expansion of cash and in-kind transfers does not necessarily mean that those failing in the labor market are adequately protected.</p> <p>As a result of such contradictory evidence, it is uncertain whether those suffering seriously as a result of labor market problems number in the hundreds of thousands or the tens of millions, and, hence, whether high levels of joblessness can be tolerated or must be countered by job creation and economic stimulus. There is only one area of agreement in this debate—that the existing poverty, employment, and earnings statistics are inadequate for one their primary applications, measuring the consequences of labor market problems.</p> <p>22. Which of the following is the principal topic of the passage?</p> <ul style="list-style-type: none"><li>(a) What causes labor market pathologies that result in suffering</li><li>(b) How social statistics give an unclear picture of the degree of hardship caused by low wages and insufficient employment opportunities</li><li>(c) Which of the currently used statistical procedures are the best for estimating the incidence of hardship that is due to unemployment</li><li>(d) Where the areas of agreement are among poverty, employment, and earnings figures</li></ul> <p>23. The author uses "labor market problems" in lines 1-2 to refer to which of the following?</p> <ul style="list-style-type: none"><li>(a) The overall causes of poverty</li><li>(b) Deficiencies in the training of the work force</li><li>(c) Trade relationships among producers of goods</li><li>(d) Shortages of jobs providing adequate income</li></ul> <p>24. The author contrasts the 1930's with the present in order to show that</p> <ul style="list-style-type: none"><li>(a) more people were unemployed in the 1930's</li><li>(b) unemployment now has less severe effects</li><li>(c) social programs are more needed now</li><li>(d) there now is a greater proportion of elderly and handicapped people among those in poverty</li></ul>
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<p>25. Which of the following proposals best responds to the issues raised by the author?</p> <p>(a) Innovative programs using multiple approaches should be set up to reduce the level of unemployment.</p> <p>(b) A compromise should be found between the positions of those who view joblessness as an evil greater than economic control and those who hold the opposite view.</p> <p>(c) New statistical indices should be developed to measure the degree to which unemployment and inadequately paid employment cause suffering.</p> <p>(d) Consideration should be given to the ways in which statistics can act as partial causes of the phenomena that they purport to measure.</p> <p>26. The author's purpose in citing those who are repeatedly unemployed during a twelve-month period is most probably to show that</p> <p>(a) there are several factors that cause the payment of low wages to some members of the labor force</p> <p>(b) unemployment statistics can underestimate the hardship resulting from joblessness</p> <p>(c) recurrent inadequacies in the labor market can exist and can cause hardships for individual workers</p> <p>(d) a majority of those who are jobless at any one time do not suffer severe hardship</p> <p>27. The author states that the mitigating effect of social programs involving income transfers on the income level of low-income people is often not felt by</p> <p>(a) the employed poor</p> <p>(b) dependent children in single-earner families</p> <p>(c) workers who become disabled</p> <p>(d) retired workers</p> <p>28. According to the passage, one factor that causes unemployment and earnings figures to overpredict the amount of economic hardship is the</p> <p>(a) recurrence of periods of unemployment for a group of low-wage workers</p>	<p>(b) possibility that earnings may be received from more than one job per worker</p> <p>(c) prevalence, among low-wage workers and the unemployed, of members of families in which others are employed</p> <p>(d) fact that unemployment counts do not include those who work for low wages and remain poor</p> <p>29. The conclusion stated about the number of people who suffer as a result of forced idleness depends primarily on the point that</p> <p>(a) in times of high unemployment, there are some people who do not remain unemployed for long</p> <p>(b) the capacity for self-support depends on receiving moderate-to-high wages</p> <p>(c) those in forced idleness include, besides the unemployed, both underemployed part-time workers and those not actively seeking work</p> <p>(d) at different times during the year, different people are unemployed</p> <p>30. Which of the following, if true, is the best criticism of the author's argument concerning why poverty statistics cannot properly be used to show the effects of problems in the labor market?</p> <p>(a) A short-term increase in the number of those in poverty can indicate a shortage of jobs because the basic number of those unable to accept employment remains approximately constant.</p> <p>(b) For those who are in poverty as a result of joblessness, there are social programs available that provide a minimum standard of living.</p> <p>(c) Poverty statistics do not consistently agree with earnings statistics, when each is taken as a measure of hardship resulting from unemployment.</p> <p>(d) The elderly and handicapped categories include many who previously were employed in the labor market.</p> <p>Computer Vision Syndrome (CVS), eye strain due to frequent viewing of computer monitors, has developed into a major health issue for office workers during the last few years. There are, however, a few simple things workers can do to reduce CVS. One obvious one is to get frequent eye tests. Practical considerations include making sure the light coming from outside or the office</p>
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<p>ceiling lights are not too bright, reducing glare, adjusting the brightness of the computer screen so that its brightness is similar to that of the office, and adjusting the screen text size and colour for maximum comfort. For your own comfort make sure you blink often, exercise your eyes by looking away from the screen every few minutes and take real breaks away from the computer screen at least once an hour.</p> <p>31. CVS has been a major health issue for over thirty years</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>32. Having the correct combination of lighting factors helps to reduce CVS</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>33. The regular use of eye drops can help relax the eyes and reduce the effects of CVS</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>Surgeons and researchers in three countries recently collaborated to perform the world's first transplant of a body part using stem cell technology. A 30 year old Colombian woman, Claudia Castillo, was left barely able to breathe following a tuberculosis infection that had damaged the branch of the trachea leading to her left lung. Doctors in Spain took a section of windpipe from a deceased person, and then researchers in Italy purged the donated windpipe of all its cells to leave an empty frame of tissue. A team of doctors in Bristol grew stem cells from Ms Castillo's own bone marrow which the Italian doctors then coated onto the frame of the section of donor windpipe. The section of windpipe was</p>	<p>transplanted into the patient's body. After five months, the patient is well and shows no signs of the rejection normally associated with then transplants.</p> <p>34. Transplants using stem cell techniques are an established part of human transplant surgery</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>35. In the future this kind of transplant will be possible without the need for a donor</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>36. The stem cells used in Ms Castillo's procedure belonged to her</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>What used to be called G7, the summit of the world's seven richest economies, has increased in members to now include the world's twenty richest economies. The new larger group, the G20, met in Washington DC in November 2008. These twenty economies between them represent 90% of global GDP. The main topic on the agenda, of course, was the global financial crisis. The results of the of the meeting were disappointing as the leaders did not reformulate global finance; neither did they agree on a co-ordinated fiscal boost to fight the economic recession. They did, however, agree to refrain from raising new trade barriers. This agreement did not last long as, within 48 hours, Russia had raised its tariffs on imported cars. Most agree the meeting was worthwhile and the twenty countries will meet again before the end of April. So it seems that G7 is now part of history.</p>
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37. The leaders of the world's seven richest economies will no longer meet together in future

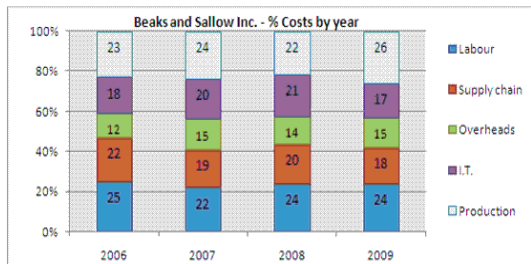
- (a) True
- (b) False
- (c) Cannot say
- (d)

38. In November 2008, Russia was one of the world's twenty richest economies

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

39. Russia, China and India were all represented at the G20 summit

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



2010 Total Costs (£10,000s)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Overheads	104	105	102	101
Supply chain	186	174	162	166
Labour	248	245	319	265
I.T.	149	138	140	191
Production	227	253	291	287

40. If the total 2010 costs represent a 5% increase on the total 2009 costs, what were the total 2009 costs (to the nearest £million)?

- (a) £3 million
- (b) £4 million
- (c) £36 million
- (d) £37 million

41. Which cost or costs on their own represented more than 17% of the total costs in 2010?

- (a) Labour and Production
- (b) Supply chain and I.T.
- (c) Labour and Supply chain
- (d) Supply chain, Labour and Production

42. In which of the years shown was there a 3:2 ratio of IT to Overheads costs?

- (a) Cannot Say
- (b) 2006 and 2007
- (c) 2006, 2008 & 2010
- (d) 2007, 2008 & 2010

43. If 2009's total costs were £250,000, what were the Production costs?

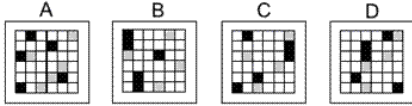
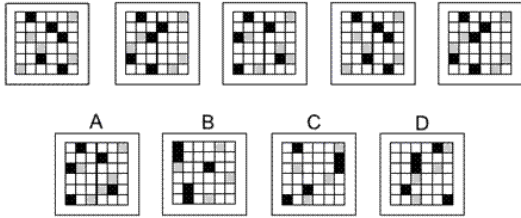
- (a) £80,000
- (b) £75,000
- (c) £70,000
- (d) £65,000

44. If the costs are put into order of decreasing size, in which two years is the order the same?

- (a) 2006 and 2007
- (b) 2006 and 2008
- (c) 2006 and 2010
- (d) 2007 and 2008

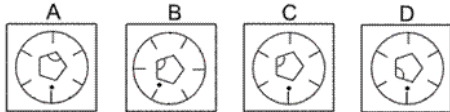
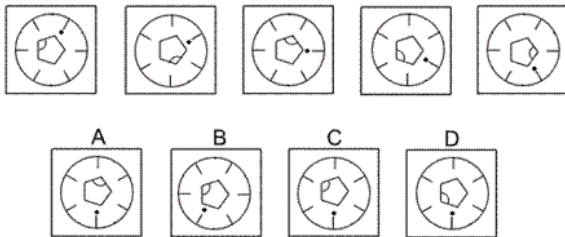
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45.



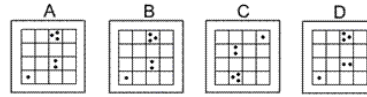
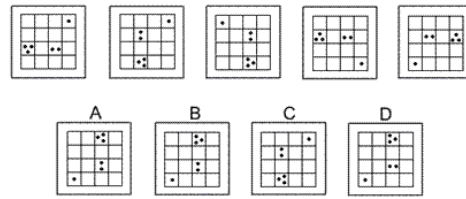
- (a) A
- (b) B
- (c) C
- (d) D

46.



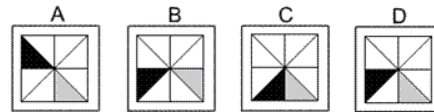
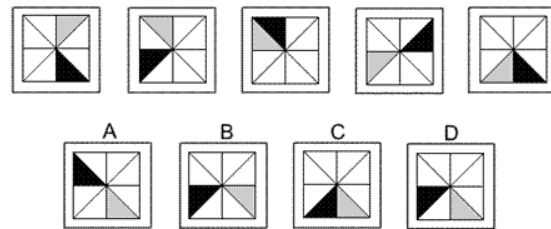
- (a) A
- (b) B
- (c) C
- (d) D

47.



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

48.



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

49. Which word does NOT belong with the others?

- (a) branch
- (b) dirt
- (c) leaf
- (d) root

**Model Test Paper 3**  
**General Study Paper II**

<p>50. Which word does NOT belong with the others?</p> <p>(a) unimportant (b) trivial (c) insignificant (d) familiar</p> <p>51. Choose the word that is a necessary part of: ovation</p> <p>(a) outburst (b) bravo (c) applause (d) encore</p> <p>52. Choose the word that is a necessary part of: vertebrate</p> <p>(a) backbone (b) reptile (c) mammal (d) animal</p> <p>53. DOMINANCE : HEGEMONY</p> <p>(a) romance : sympathy (b) furtherance : melancholy (c) independence : autonomy (d) tolerance : philanthropy</p> <p>54. AERIE : EAGLE</p> <p>(a) capital : government (b) bridge : architect (c) unit : apartment (d) house : person</p> <p>55. Here are some words translated from an artificial language. granamelke means big tree</p>	<p>pinimelke means little tree melkehoon means tree house Which word could mean "big house"?</p> <p>(a) granahoon (b) pinishur (c) pinihoon (d) melkegrana</p> <p>56. Here are some words translated from an artificial language. dionot means oak tree blyonot means oak leaf blycrin means maple leaf Which word could mean "maple syrup"?</p> <p>(a) blymuth (b) hupponot (c) patricrin (d) crinweel</p> <p>Answer questions 57 through 60 on the basis of the information below.</p> <p>Five cities all got more rain than usual this year. The five cities are: Last Stand, Mile City, New Town, Olliopolis, and Polberg. The cities are located in five different areas of the country: the mountains, the forest, the coast, the desert, and in a valley. The rainfall amounts were: 12 inches, 27 inches, 32 inches, 44 inches, and 65 inches.</p> <p>The city in the desert got the least rain; the city in the forest got the most rain. New Town is in the mountains. Last Stand got more rain than Olliopolis. Mile City got more rain than Polberg, but less rain than New Town. Olliopolis got 44 inches of rain. The city in the mountains got 32 inches of rain; the city on the coast got 27 inches of rain.</p> <p>57. Which city is in the desert?</p> <p>(a) Last Stand (b) Mile City (c) New Town (d) Polberg</p>
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**Model Test Paper 3**  
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<p>58. Which city got the most rain?</p> <p>(a) Last Stand (b) Mile City (c) New Town (d) Olliopolis</p> <p>59. How much rain did Mile City get?</p> <p>(a) 12 inches (b) 27 inches (c) 32 inches (d) 44 inches</p> <p>60. Where is Olliopolis located?</p> <p>(a) the mountains (b) the coast (c) in a valley (d) the desert</p> <p>61. Sterling Silver is 92.5% pure silver. How many grams of Sterling Silver must be mixed to a 90% Silver alloy to obtain a 500g of a 91% Silver alloy?</p> <p>(a) 100 grams (b) 150 grams (c) 200 grams (d) 250 grams</p> <p>62. How many Kilograms of Pure water is to be added to 100 Kilograms of a 30% saline solution to make it a 10% saline solution.</p> <p>(a) 200 Kilograms (b) 250 Kilograms (c) 300 Kilograms (d) 400 Kilograms</p> <p>63. A 50 ml after-shave lotion at 30% alcohol is mixed with 30 ml of pure water. What is the percentage of alcohol in the new solution?</p>	<p>(a) 16.75% (b) 17.75% (c) 18.75% (d) 20.75%</p> <p>64. You add <math>x</math> ml of a 25% alcohol solution to a 200 ml of a 10% alcohol solution to obtain another solution. Find the amount of alcohol in the final solution in terms of <math>x</math>. Find the ratio, in terms of <math>x</math>, of the alcohol in the final solution to the total amount of the solution. What do you think will happen if <math>x</math> is very large? Find <math>x</math> so that the final solution has a percentage of 15%.</p> <p>(a) 64 ml (b) 200 ml (c) 300 ml (d) 400 ml</p> <p>65. What is the least positive integer that has the same number of positive factors as 175?</p> <p>(a) 8 (b) 10 (c) 12 (d) 16</p> <p>66. If <math>a</math> and <math>b</math> are real numbers, <math>i^2 = -1</math>, and <math>(a+b)+5i=9+ai</math>, what is the value of <math>b</math>?</p> <p>(a) 4 (b) 5 (c) 9 (d) <math>4+5i</math></p>
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Model Test Paper 3  
General Study Paper II

67. What are all values of  $x$  for which ?

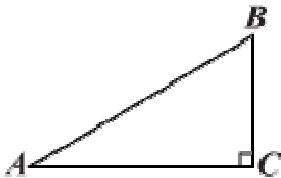
$$4 - x^2 \geq x - 2 ?$$

- (a)  $x \geq -3$
- (b)  $-5 \leq x \leq 0$
- (c)  $-3 \leq x \leq 2$
- (d)  $x \leq -3$

68. Twenty students have each sampled one or more of three kinds of candy bars that a school store sells. If 3 students have sampled all three kinds, and 5 have sampled exactly two kinds, how many of these students have sampled only one kind?

- (a) 8
- (b) 12
- (c) 15
- (d) 17

69.



Note: Figure not drawn to scale.

In the figure above, triangle ABC has a right angle at C. If the length of side AC is 10 and the measure of angle BAC is  $22^\circ$ , what is the length of side BC?

- (a) 3.7
- (b) 4.0

- (c) 5.8
- (d) 6.8

70. Marigolds are to be planted inside a circular flower garden so that there are 4 marigolds per square foot. The circumference of the garden is 20 feet. If marigolds are available only in packs of 6, how many packs of 6 flowers are needed?

- (a) 6
- (b) 13
- (c) 14
- (d) 22

71. There is a box containing blue, red, yellow, and green pencils. You randomly draw one of the 50 pencils. You are 2.3 times more likely to draw a green pencil than you are to draw a blue pencil. There are 8 more green pencils than there are red pencils. If you have a 4% chance of drawing a yellow pencil, then what are the odds of drawing a red pencil?

- (a) 7/25
- (b) 1/5
- (c) 13/50
- (d) 3/10

72. You draw two random cards from a standard 52-card deck. What is the probability that you will draw at least one ace?

- (a) 33/221
- (b) 29/221
- (c) 2/13
- (d) 3/26

73. You randomly flip four coins. What is the probability that you will get 2 heads and 2 tails?

- (a) 3/16
- (b) 1/16
- (c) 3/8
- (d) 1/8

**Model Test Paper 3**  
**General Study Paper II**

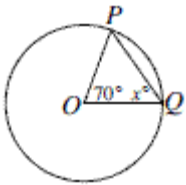
74. You randomly roll two dice. What is the probability that the product of the two numbers rolled will equal a square number?

- (a)  $1/9$
- (b)  $2/9$
- (c)  $7/36$
- (d)  $5/18$

75. If 15 workers can paint a certain number of houses in 24 days, how many days will 40 workers take, working at the same rate, to do the same job?

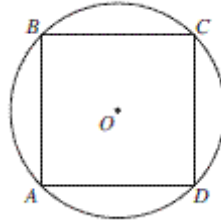
- (a) 7
- (b) 8
- (c) 9
- (d) 10

76. If P and Q are points on circle O, what is the value of x?



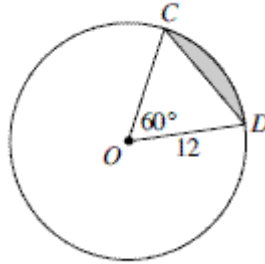
- (a) 45
- (b) 50
- (c) 55
- (d) 60

77. In the figure below, square ABCD is inscribed in circle O. If the area of the square is 50, what is the circumference of the circle?



- (a)  $\pi\sqrt{50}$
- (b)  $10\pi$
- (c)  $25\pi$
- (d)  $50\pi$

78. What is the area of the shaded region?



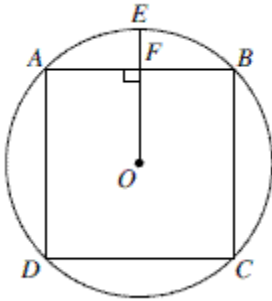
- (a)  $144\pi - 144\sqrt{3}$
- (b)  $144\pi - 36\sqrt{3}$
- (c)  $144\pi - 72$
- (d)  $24\pi - 36\sqrt{3}$

Model Test Paper 3  
General Study Paper II

79. A is the center of a circle whose radius is 10, and B is the center of a circle whose diameter is 10. If these two circles are tangent to one another, what is the area of the circle whose diameter is AB?

- (a) 30p
- (b) 56.25p
- (c) 100p
- (d) 225p

80. In the figure below, square ABCD is inscribed in a circle whose center is O and whose radius is 4. If EO ⊥ AB at F, what is the length of EF?



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

Model Test Paper 3  
General Study Paper II

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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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"/>
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11	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	31	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	51	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	71	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	32	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	52	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	72	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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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16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	36	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	56	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	76	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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"/>
18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	38	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	58	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	78	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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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