IBA Past Entry Test Papers

BS – 2010

Section: English
Number of Questions: 45 Time allowed: 45 Minutes

Section: Mathematics
Number of Questions: 50 Time allowed: 75 Minutes

Negative Marking: Yes

ALL ANSWERS MUST BE GIVEN ON THE COMPUTERIZED ANSWER SHEET
BY CROSSING THE CORRESPONDING LETTER
PART I - ENGLISGH M.C.Q'S

Number of Questions: 45
Questions on Page Numbers: 1 To 8

Time Allowed: 45 Minutes
Negative Marking: Yes

Q 1-15 Fill in the blanks with suitable word given at the end of the text.

If you work at a business where managers from different geographic locations meet on a regular basis, you __Q1__ your company a fortune in travel costs __Q2__ a really ingenious technology that you probably don't know about. The technology I am talking about is modern conference call technology.

Companies are spending __Q3__ sending managers from one location to another to meet regularly with executives and also other managers. This is an extremely costly process. __Q4__ do you have to consider the out of pocket costs of all that traveling, __Q5__ also need to consider the opportunity cost of those meetings as well. All of that time that these managers and executives are spending at airports, waiting in lines for rental cars, recovering lost luggage, checking into hotels, etc. could be time __Q6__ on business matters that provide value to the company. They could be looking over reports, managing employees or talking with customers. Wouldn't you agree that these tasks are more beneficial than having that person away for a day or two while he is traveling?

In case you haven't caught up on things recently, there are ways that you can __Q7__ those meetings without taking your manager out of town, without wasting all that travel time and without wasting all of that money. You could start holding those less than vital meetings over the telephone or over the computer. The technology to do this has been around for a good long time, but it is still under-utilized.

These teleconferencing services __Q8__ dramatically over the years __Q9__ the internet as part of their service. You can __Q10__ on projects by showing Power Point presentations __Q11__ internet while you are conducting your meeting. You can even record the whole thing so that if one person __Q12__ to attend the meeting, that person can view the meeting after the fact __Q13__ to their own schedule. How is that compared to the system you are using right now?

The other major advantage is the __Q14__ of it all. If you need to __Q15__ emergency meeting to respond to some major event, this kind of service gives you that opportunity without having to book a bunch of last minute flights.

Q1

A) should save
B) have to save
C) could save
D) are to save

Q2

A) with using
B) by using
C) for using
D) and using

Q3

A) a ransom
B) a fortune
C) a lifetime
D) an eternity

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PART I - ENGLISGH M.C.Q'S

Q4

A) However
B) Unfortunately
C) Not only
D) Therefore

Q5

A) then you
B) when you
C) if you
D) but you

Q6

A) better spent
B) more spent
C) better spending
D) more spending

Q7

A) accommodate
B) acknowledge
C) accomplish
D) accentuate

Q8

A) shall improved
B) will improved
C) have improved
D) has improved

Q9

A) by incorporating
B) by inculcating
C) with inducing
D) with encouraging

Q10

A) compromise
B) consolidate
C) collaborate
D) cooperate

Q11

A) for the
B) over the
C) by the
D) with the

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PART I - ENGLISGH M.C.Q'S

Q12

A) wasn't able
B) hasn't able
C) can't able
D) won't able

Q13

A) because
B) according
C) however
D) therefore

Q14

A) approachability
B) congeniality
C) rationality
D) flexibility

Q15

A) call to
B) call for
C) call that
D) call an

Q 16-25 Choose the best option

Q16 If she _____ about his financial situation, she would have helped him out.

A) knew
B) had been knowing
C) had known
D) have known

Q17 I'll _____ their cat while they are away on holiday.

A) be looking into
B) be looking at
C) be looking after
D) be looking over

Q18 In the late 1970's and early 1980's, the United States developed the reusable space shuttle _____ to space cheaper and easier.

A) to make access
B) and making access
C) which made accessible
D) and made accessible

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PART I - ENGLISGH M.C.Q'S

Q19 Genetically, the chimpanzee is more similar to humans _____.

A) are than any other animal
B) than is any other animal
C) any other animal is
D) and any other animal is

Q20 _____ more than 65,000 described species of protozoa, of which more than half are fossils.

A) Being that there are
B) There being
C) Are there
D) There are

Q21 Modern skyscrapers have a steel skeleton of beams and columns ___a three-dimensional grid.

A) forms
B) from which forming
C) and forming
D) that forms

Q22 The average level of United States prices grew very little from 1953 until the mid-1960's when _____.

A) did inflation begin
B) inflation began
C) the beginning of inflation
D) did the beginning of inflation

Q23 The basis premise behind all agricultural production is _____ available the riches of the soil for human consumption.

A) to be made
B) the making
C) making is
D) to make

Q24 ___to the united states House of Representatives in 1791, Nathaniel Macon remained in office until 1815.

A) Election
B) Why he was elected
C) Elected
D) Who was elected

Q25 The universe is estimated ___between 10 billion and 20 billion years old.

A) being
B) to be
C) which is
D) is

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PART I - ENGLISGH M.C.Q'S

Q 26-35 Select the best option

Q26 The long dark days and lack of a job made him feel _____.

A) alarmed
B) excited
C) depressed
D) dissatisfied

Q27 In Sweden, public _____ of official documents is widespread.

A) agony
B) defy
C) scrutiny
D) litany

Q28 With her red hair and lively, outgoing manner, she was a _____ character.

A) ugly
B) tearful
C) flamboyant
D) secretive

Q29 She never knew whether her husband would be in a angry or cheerful mood as he was such a _____ character.

A) volatile
B) passive
C) lazy
D) voluble

Q30 The aim of the American Civil War was to _____ the slaves.

A) validate
B) inaugurate
C) emancipate
D) liquidate

Q31 The youths came _____ insolently into the room.

A) dragging
B) slouching
C) driving
D) twiddling

Q32 The judge imposed a light sentence in view of the _____ circumstances.

A) unfair
B) extensive
C) extenuating
D) qualifying

(go on to the next page)

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PART I - ENGLISGH M.C.Q'S

Q33 Five readers _____ the correct solution to our recent competition.

A) communicated
B) qualified
C) submitted
D) subscribed

Q34 Many local authorities realize there is a need to make _____ for disabled people in their housing programmes.

A) assistance
B) conditions
C) admittance
D) provision

Q35 The government's new safety pamphlet _____ against smoking in bed.

A) declares
B) advises
C) emphasizes
D) stresses

Reading Comprehension

Choose the best answer for each passage

Erosion is regarded not merely as the physical removal of soil by water and wind, but rather as the deterioration of all the component parts of the habitat in which man and his crops and livestock have to exist. Since there is no conclusive evidence for any major climatic change in historic times to explain this deterioration, we must conclude that the eroding of the total environment has been due primarily to thoughtless destruction of the vegetative cover. This has led to deterioration of the microclimate above and below the surface, generally in the direction of a general drying out of the soil which has exposed it to erosive action of wind and rainfall of high intensity or frequency, and to the loss of organic matter in the soil, thus reducing its capacity to resist erosion by conserving the water that falls on the surface. If everything possible is done within the total environment to conserve the naturally planted or cultivated vegetation, this will also ensure optimal conservation of soil and water.

Q36 It is argued in the passage that the impoverishment of the world's habitat ..... .

A) is first and foremost due to man's irresponsible abuse of the vegetable cover of the earth
B) is largely due to gradual changes in climate over long years
C) became inevitable as soon as agricultural and animal husbandry developed
D) cannot be remedied

Q37 The definition of erosion given in this passage ..... .

A) is a strictly regional one
B) disregards man's role in it
C) concentrates on flooding
D) is a broad one

(go on to the next page)

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PART I - ENGLISGH M.C.Q'S

Q38 It is pointed out in the passage that the loss of organic matter in the soil ..... .

A) led to the destruction of the world's vegetative cover
B) is a direct result of insufficient rain
C) is an irreversible process
D) has made the soil more susceptible to erosion

There was in increase of about 10% in the investment in the public sector, like electricity, irrigation quarrying, public services and transport; even though the emphasis leaned towards transport and away from the other sectors mentioned. A 16-17% growth in investment, including a 30% increase in investment in business premises has been recorded in trade and services. Although there continued to be a decline in the share of agriculture in total gross investment in the economy, investment grew by 9% in absolute terms, largely spurred on by a 23% expansion of investment in agriculture equipment. Housing construction had 12% more invested in it in 1964, not so much owing to increase demand, as to fears of impending new taxes and limitation of building.

There was a rise of close to 11% in the total consumption in real terms during 1964 and per capita personal consumption by under 7%, as in 1963. The undesirable trend towards a rapid rise in consumption, evident in previous years, remains unaltered. Since at current prices consumption rose by 16% and disposable income by 13%, there was evidently a fall in the rate of saving in the private sector of the economy. Once again a swift advance in the standard of living was indicated in consumption patterns. Though fruit consumption increased, expenditure on food, especially bread and staple items, declined significantly. There was a continuing increase in the outlay on furniture and household equipment, health, education and recreation. The greatest proof of altered living standards was the rapid expansion of expenditure on transport (including private cars) and personal services of all kinds, which occurred during 1964. The changing composition if purchased durable goods demonstrated the progressive affluence of large sectors of the public. On the one hand increased purchase of automobiles and television sets were registered, a point of saturation was rapidly being approached for items like the first household radio, gas cookers, and electric refrigerators.

Q39 It is possible to conclude from this passage, that the people of the country were

A) spending more money than they earn
B) investing and consuming at an accelerated pace
C) saving more money than previously
D) spending their money wisely

Q40 According to the author the trend towards a rapid rise in consumption is "undesirable" as:

A) here was an increase in the expenditure on frills and luxuries
B) the people were affluent
C) there was a rise in the standard of living
D) people were saving less

Q41 The area, which saw the greatest expenditure of investment funds was

A) The public sector
B) Business premises
C) Housing construction
D) A field which cannot be determined

The Food and Drug Administration has formulated certain severe restrictions regarding the use of antibiotics, which are used to promote the health and growth of meat animals. Though the different types of medicines mixed with the fodder of the animals kills many microorganisms, it also encourages the appearance of bacterial strains, which are resistant to anti-infective drugs.

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PART I - ENGLISGH M.C.Q'S

It has already been observed that penicillin and the tetracyclines are not as effective therapeutically as they once used to be. This resistance to drugs is chiefly caused due to tiny circlets of genes, called plasmids, which are transferable between different species of bacteria. These plasmids are also one of the two kinds of vehicles on which molecular biologists depend on while performing gene transplant experiments. Existing guidelines also forbid the use of plasmids, which bear genes for resistance to antibiotics, in the laboratories. Though congressional dabate goes on as to whether these restrictions need to be toughened with reference to scientists in their laboratories, almost no congressional attention is being paid to an ill advised agricultural practice, which produces deleterious effects.

Q42 In the present passage, the author's primary concern is with:

A) The discovery of methods, which eliminate harmful microorganisms without generating drug-resistant bacteria.
B) Attempting an explanation of the reasons for congressional inaction about the regulation of gene transplant experiments.
C) Portraying a problematic agricultural practice and its serious genetic consequences
D) The verification of the therapeutic ineffectiveness of anti-infective drugs

Q43 As inferred from the above passage, the mutual transfer of plasmids between different bacteria can result in which of the following?

A) Microorganisms, which have an in-built resistance to drugs
B) Therapeutically useful circlets of genes
C) Penicillin like anti-infective drugs
D) Viruses used by molecular biologists

Q44 The attitude the author has with reference to the development of bacterial strains that render antibiotic drugs in effective can best be described as

A) indifferent
B) perplexed
C) pretentious
D) apprehensive

Q45 According to the above passage the author believes that those who favor the stiffening of restrictions on gene transplant research should logically also.

A) Approve and aid experiments with any plasmids except those, which bear genes for antibiotic resistance.
B) Inquire regarding the addition of anti-infective drugs to livestock feeds
C) Oppose the using of penicillin and tetracyclines in order to kill microorganisms
D) Agree to the development of meatier live-stock through the use of antibiotics

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PART II - Mathematics M.C.Q'S

Number of Questions: 50 Time Allowed: 75 Minutes

Questions on Page Numbers: 9 To 13 Negative Marking: Yes

46. A triangle is formed by the x-axis, the y-axis and the line y = ax + b. If a = -b, then what is the volume of the cone generated by rotating this triangle around y-axis.
(A) $\frac{\pi}{9}$ (B) $\frac{\pi}{3}a$ (C) π (D) 3π

47. If $\csc\theta = \frac{1}{3t}$, then $\tan\theta$ = _____ .
(A) $\frac{3t}{\sqrt{1-3t^2}}$ (B) $\sqrt{1-3t^2}$ (C) $\frac{\sqrt{1-9t^2}}{3t}$ (D) $\frac{3t}{\sqrt{1-9t^2}}$

48. Which of the following expresses the domain of $g(x) = \frac{3}{(x-2)(x+3)}$?
(A) $\{x: x \neq 0\}$ (B) $\{x: x \neq 2\}$ (C) $\{x: x \neq -3\}$ (D) $\{x: x \neq 2 \text{ and } x \neq -3\}$

49. y varies directly as the cube of x. When x = 0.5, y = 2.5. If y = 540 then x equals.
(A) $-3\sqrt{3}$ (B) 3 (C) –9 (D) –3

50. What is the distance between the two x-intercepts of the graph of $y = x^2 - 12x + 20$.
(A) 2 (B) 4 (C) 8 (D) 10

51. If $4^{3x} = 512$, then x =
(A) $\frac{3}{2}$ (B) 1 (C) 3 (D) $\frac{9}{4}$

52. If the point (–5, –12) is reflected across the x-axis and then across y-axis, then what are the coordinates of the resulting point?
(A) (5, 0) (B) (0, 12) (C) (5, 12) (D) (–5, –12)

53. $\frac{14!}{11!2!3!}$ =
(A) 180 (B) 192 (C) 182 (D) 282

54. For what positive value of a does $a - 2\sqrt{a+7}$ equal -4?
(A) 0.5 (B) 6 (C) 3 (D) 2

55. The distance between the points (–3, –5) and (3, 12) is
(A) $5\sqrt{11}$ (B) $3\sqrt{13}$ (C) $6\sqrt{13}$ (D) $5\sqrt{13}$

56. What is the slope of the line given by $2y + 3 = \frac{5}{4}(3x - 7)$?
(A) $\frac{15}{4}$ (B) 3 (C) $\frac{15}{8}$ (D) $\frac{8}{15}$

57. If x mod y is the remainder when x is divided by y, then (57 mod 6) – (5 mod 4) =
(A) 3 (B) 2 (C) 4 (D) 5

58. $|2x - 2y| + |2y - 2x| =$ _____.
(A) 0 (B) $2|x - y|$ (C) $y - x$ (D) $4|x - y|$

59. If $y = \sqrt{x} + \frac{1}{x+5}$ then which of the following statements must be true?
I. $x \geq 0$ II. $x \neq -5$ III. $x \neq 5$
(A) I only (B) II only (C) I and II only (D) II and III only

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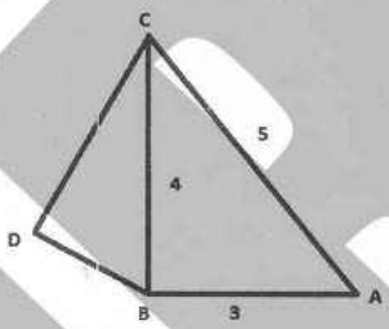
BY CROSSING THE CORRESPONDING LETTER
PART II - Mathematics M.C.Q'S

60. If $f(x) = 5 - 2x$ and $g(x) = x^2 + 7$, then $f(g(-2)) =$
(A) −17 (B) 17 (C) 88 (D) −88

61. If the perimeter of a rectangle is 60 meters and its area is 200 square meter, then one of its sides must be _____ the other side.
(A) one-third of (B) triple (C) double (D) one-tenth of

62. If $i^2 = -1$ then $\frac{i^{13}+i^{12}+i^{11}}{10} =$ _____
(A) 0.1 (B) 0 (C) −1 (D) 1

63. At least one of the following lines is parallel to the line $3x - 12y = 12$. Which one _____.
(A) $x - 4y = -1$ (B) $x + 4y = -1$ (C) $-x - 4y = -1$ (D) $3x + 12y = 0$



64. The triangles ABC and BDC are similar triangles. The lengths of the sides of the triangle ABC are indicated. The area of the plane quadrilateral ABDCA is _____.
(A) 9.84 (B) 60 (C) 38.4 (D) 17.6

65. If $log_3 3x = 3$, then $x =$ _____.
(A) 3 (B) 9 (C) 1 (D) - 9

66. If $f(x) = \sqrt{36 - x^2}$, then the range of values of f is given by _____.
(A) $\{y: 0 \le y \le 36\}$ (B) $\{y: -6 \le y \le 6\}$ (C) $\{y: 0 \le y \le 6\}$ (D) $\{y: -6 \le y \le 0\}$

67. If two vertices of an equilateral triangle are (2, 3) and (5, 3) then the area of the triangle is ____.
(A) $4\sqrt{3}/9$ (B) $9\sqrt{3}/4$ (C) $4\sqrt{3}$ (D) $3\sqrt{3}/9$

68. The equation of the straight line joining the points of intersections of $x^2 + y^2 = 12$ and $y^2 = 4x$ is given by ____.
(A) $x = -2$ (B) $x = 2$ (C) $y = -2$ (D) $y = 2$

69. If a function is defined as $f(x) = \begin{cases} x - 2 & for\ x > 0 \\ -x + 3 & for\ x \le 0 \end{cases}$ then $f(1) - f(-1) =$ ____.
(A) 5 (B) −5 (C) −1 (D) 4

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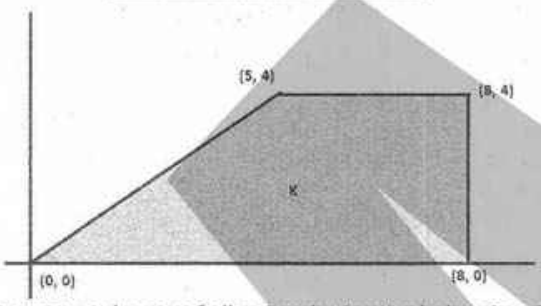
PART II - Mathematics M.C.Q'S



70. In the figure above K represents the set of all points in the shaded region. The area of this shaded region that lies above the line $4x + 3y = 32$ is _____.
(A) 12 (B) 24 (C) 16 (D) 6

71. If $f(x) = \frac{x-1}{x+1}$ then $f^{-1}(x) =$ _____.
(A) $\frac{x-1}{x+1}$ (B) $\frac{x+1}{x-1}$ (C) $\frac{-1}{f(x)}$ (D) $\frac{1}{f(x)}$

72. If $\det(A) = \begin{vmatrix} a & d & g \\ b & e & h \\ c & f & i \end{vmatrix}$, then $\begin{vmatrix} a & 2d & 3g \\ b & 2e & 3h \\ c & 2f & 3i \end{vmatrix} =$ _____.
(A) $2\det(A)$ (B) $3!\det(A)$ (C) 3! (D) 6

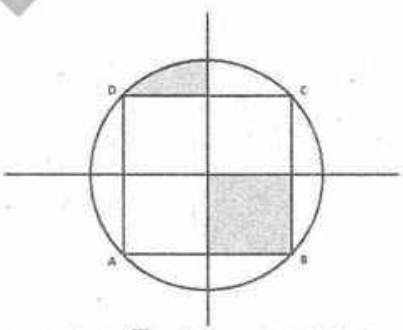
73. Which of the following functions satisfy $f(x) > 1$ for all real values of x?
(A) $f(x) = x^2 + 2$ (B) $f(x) = 2sinx - 2$ (C) $f(x) = x^2 - 2$ (D) $f(x) = |x + 2|$

74. Given that $f(x) = \frac{x^2-6x-40}{x^2-16}$, then $f(-4) =$ _____.
(A) ∞ (B) indeterminate (C) $\frac{7}{4}$ (D) $\frac{4}{7}$

75. A straight line parallel to the line $3x + 4y = 12$ and passing through the point (–4, 12) has x-intercept _____.
(A) (10, 0) (B) (0, 12) (C) (12, 0) (D) (–12, 0)

76. In order that the system of equations $ax + 2y = b$, $3x - y = c$ has only one solution _____.
(A) $a \neq 6$ (B) $a \neq -6$ (C) $a \neq b$ (D) b≠ c

77. $\left|\frac{3-4i}{8+6i}\right| =$ _____.
(A) 10 (B) 0.5 (C) 5 (D) –5



78. In the figure above the radius of the circle is $\sqrt{2}$ and square ABCD is inscribed in it. The area of the shaded region is _____.
(A) $\frac{\pi}{2} + 1$ (B) $\frac{\pi}{2} + \frac{1}{2}$ (C) $\frac{\pi}{2} - \frac{1}{2}$ (D) $\frac{\pi}{4} + \frac{1}{2}$

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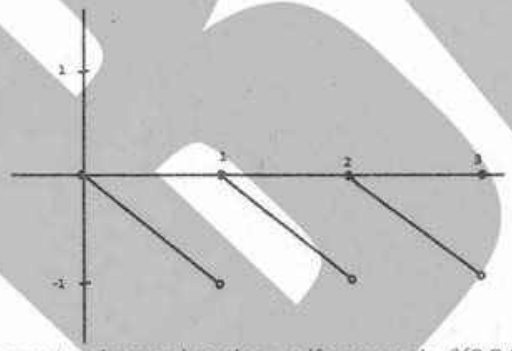
BY CROSSING THE CORRESPONDING LETTER
PART II - Mathematics M.C.Q'S

79. $sec\,(tan^{-1}(1))$ _____.
(A) 1/2 (B) $\frac{\sqrt{3}}{2}$ (C) $\frac{1}{\sqrt{2}}$ (D) $\sqrt{2}$

80. $\lim_{x\to -1}\frac{x^2+x}{x^2-1}$ _____.
(A) 0.5 (B) −1/2 (C) undefined (D) ∞

81. A ball thrown vertically upwards reaches a maximum height of 100 meters. In the absence of wind and any air friction it comes down vertically and bounces back to a height one third that of the previous height attained. The height attained by the ball after 5th bounce is _____.
(A) $\frac{100}{15}$ (B) $\frac{100}{27}$ (C) $\frac{200}{243}$ (D) $\frac{100}{243}$

82. Eleventh term in an arithmetic progression is 243 and the twenty ninth is 27. The thirty first term of the progression is _____.
(A) 3 (B) −12 (C) 363 (D) 0



83. $f(x) = [x]$ is defined as the greatest integer less than x. (for example $f(2.34) = 2$). The graph shown in the figure above for $x \in [0,3]$ represents the function _____.
(A) $[x] + x$ (B) $[x] - x$ (C) $[x] + |x|$ (D) $[x]$

84. Given that $f(x) = \frac{\sqrt{x}+3}{2}$, then $f^{-1}(x) =$ _____.
(A) $x^2 - 3x + 2$ (B) $2(2x^2 - 6x + 4.5)$ (C) $(2x - 2.5)^2$ (D) $x^2 - 3x + 9$

85. The sum of the lengths of the semi minor and the semi major axis of an ellipse is five less than the their product. If their product is 12 then the equation of the ellipse is _____.
A) $\frac{x^2}{9} + \frac{y^2}{4} = 1$ (B) $\frac{x^2}{9} + \frac{y^2}{16} = 1$ (C) $\frac{x^2}{16} + \frac{y^2}{4} = 1$ (D) $\frac{x^2}{9} - \frac{y^2}{16} = 1$

86. The straight line perpendicular to the line $2x - 5y = 15$ is _____.
(A) $2x + 5y = 15$ (B) $5x - 5y = 5$ (C) $5x + 2y = 2$ (D) $5x - 2y = 15$

87. The circle $(x + 1)^2 + (y - 4)^2 = 26$ intersects the y-axis at _____.
(A) (9, 0) and (−1, 0) (B) (9, 0) and (0, −1) (C) (0, 9) and (−1, 0) (D) (0, 9) and (0, −1)

88. A right angled triangle has one of its acute angles equal to 30^0. The volume of the cone generated by revolving the triangle about the side opposite to 30^0 angle is A_1 and the volume of the cone generated by the revolving the triangle about the side adjacent to 30^0 angle is A_2. Then $A_1:A_2$ = _____.
(A) $\frac{\pi}{\sqrt{3}}$ (B) $\sqrt{3}$ (C) $\frac{\sqrt{3}}{\pi}$ (D) $\frac{1}{\sqrt{3}}$

89. A colony of bacteria has an initial population of 1.56 million that doubles in every 7 days. In 23 days the population should exceed _____.
(A) 12.5 million (B) 25 million (C) 24.5 million (D) 20 million

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ALL ANSWERS MUST BE GIVEN ON THE COMPUTERIZED ANSWER SHEET
BY CROSSING THE CORRESPONDING LETTER
PART II - Mathematics M.C.Q'S

90. The Airport Taxi service charges Rs 300 plus Rs 10 for every half a kilometer travelled. A passenger travelled k kilometers and had to pay Rs _____.
(A) 300 + 10k (B) 300 + 5k (C) 300 + 20k (D) 300 – 20k

91. One of the following points lies outside the region described by $(x-2)^2 + (y+4)^2 = 25$.
(A) (0, 0) (B) (–1, –1) (C) (2, –3) (D) (3, 1)

92. If $t = log_n(n^m)$ then _____.
(A) $n = m$ (B) $m = 0$ (C) $m = t^2$ (D) $m = t$

93. If $A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$ then A^{-1} = _____.
(A) $\begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$ (B) $\begin{bmatrix} 3 & 2 \\ -1 & 1 \end{bmatrix}$ (C) $\begin{bmatrix} 3 & -2 \\ -1 & 1 \end{bmatrix}$ (D) $\begin{bmatrix} 3 & -2 \\ 1 & 1 \end{bmatrix}$

94. If $= \frac{3}{7}$, $q = \frac{1}{5}$ and $= \frac{2}{5}$ then $14p - \frac{9r^2}{4q^2} =$ _____.
(A) 15 (B) 3 (C) –3 (D) 9

95. A coin is tossed four times. What is the probability that heads appear at least three times?
(A) $\frac{2}{5}$ (B) $\frac{5}{16}$ (C) $\frac{9}{16}$ (D) $\frac{5}{8}$

Congratulation! You have finished now math MCQs.

Please cross (X) Option E in the answer sheet corresponding to all unanswered MCQs.