B.ED ARTS 2023

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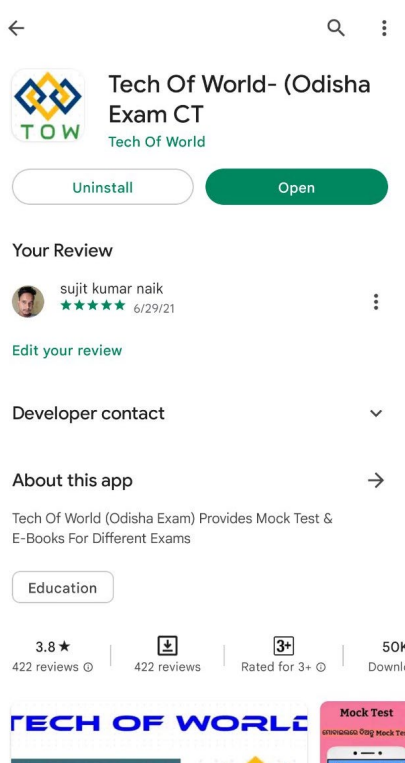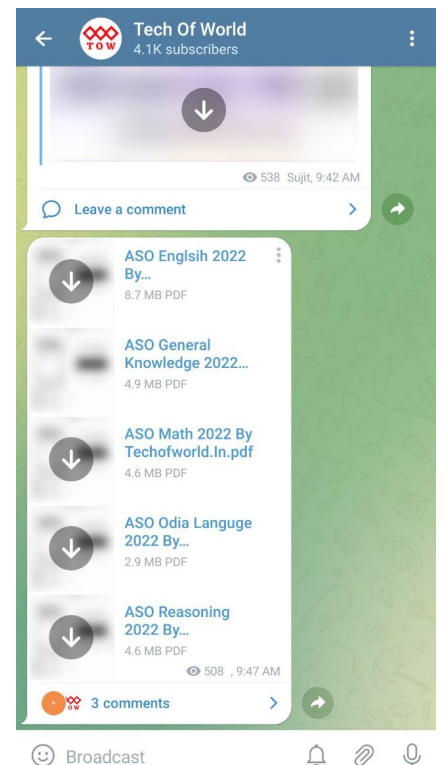- 2,300 ଟି ପୂର୍ବ ବର୍ଷର ପ୍ରଶ୍ନ
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Section 1 - PaperI-English Language

Passage Questions (1-5):

Read the passage and answer the questions that follow:

The gate was packed with weary travellers, most of them standing and huddled along the walls because the meagre allotment of plastic chairs had long since been taken. Every plane that came and went held at least eighty passengers, yet the gate had seats for only a few dozen.

There seemed to be a thousand waiting for the 7 P.M. flight to Miami. They were bundled up and heavily laden, and after fighting the traffic and the check-in and the mobs along the concourse they were subdued, as a whole. It was the Sunday after Thanksgiving, one of the busiest days of the year for air travel, and as they jostled and got pushed farther into the gate many asked themselves, not for the first time, why, exactly, they had chosen this day to fly.

1) How many passengers waited for the flight to Miami?

A) Eighty.
B) One thousand.
C) Seven.
D) Thousands .

2) Which was one of the busiest days of the year for air travel?

A) Sunday after the Halloween.
B) Saturday after the New Year.
C) Sunday after Christmas.
D) Sunday after Thanksgiving.

3) The passengers thought they had chosen the wrong day to fly because of the

A) cloudy weather.
B) snow all around
C) crowded airports
D) delayed Flights

4) Which of the following is not a reason for the passengers to think that they had chosen a wrong day to fly?

A) Flights arrived on time.
B) They faced heavy traffic.
C) They faced heavy rush at check-ins.
D) They faced heavy crowd at concourse.

5) Why were the passengers huddled along the wall?

A) There was no place to stand.
B) There was meagre allotment of chairs.
C) Flights were delayed.
D) The security staff had rounded them up.

6) Fill in the blank with the correct option:

John's face looked _____ because he was carrying a _____ of water up two floors.

A) pail, pail
B) pale, pail
C) pale, pale
D) pail, pale

7) Which of the following best exemplifies the meaning of the idiom "Lose face"?

A) Be respected
B) Losing life
C) Be humiliated
D) Being real

8) Fill in the blank with correct prefix or suffix:

Laughter is a good _____dote to stress.

A) ante
B) anti
C) extra
D) intra

9) Which of the following words is correctly spelt?

A) noticeable
B) noticable
C) notisable
D) notiseable

10) The idiom "See the elephant" means

A) gaining true and valuable life experience of the world
B) gaining true and valuable life experience from stories
C) seeing the obvious in valuable life experience of the world
D) seeing what is shown to one in the life experience of the world

Section 2 - PaperI-Education and General Awareness

11) Four scales- P, Q, R and S with least counts 0.01 cm, 0.05 cm, 0.01 mm and 0.05 mm, respectively, are used to measure the length of a rod. Which scale will give the most accurate reading of the length of the rod?

A) R
B) S
C) P
D) Q

12) Mandal Commission was appointed by which political party at the centre?

A) Janata Party
B) Congress Party
C) Communist Party of India
D) Jana Sangh Party

13) The On-Demand Examination system in secondary schooling is available with the -

A) ICSE
B) NIOS
C) CBSE
D) State Boards

14) The Wardha Scheme of Education was popularly known as -

A) Nayi Taleem
B) Naya Jeevan
C) Naya Desh
D) Nayi Jagriti

15) The 1993 Report appointed by MHRD, was asked to analyse the problem of the 1993 curriculum was titled?

A) Learning without Walls
B) Learning without Burden
C) Learning without Books
D) Learning without Fear

Section 3 - PaperI-Reasoning

16) The total of the ages of Ravi, Ram and Rohan is 60 years. What was the total of their ages three years ago?

A) 51 years
B) 61 years
C) 41 years
D) 31 years

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17) In a certain code language, A is written as B, B is written as C, and so on. How will ART be written in that code language?

A) BSU
B) BTU
C) BSV
D) BTV

---

18) In the following questions, mark:

1, if statement I alone is sufficient to answer the problem.

2, if statement II alone is sufficient to answer the problem.

3, if statements I and II both taken together are sufficient to answer the problem.

4, if statements I and II taken together are NOT sufficient to answer the problem.

Is A < B?

I. $A^2 < B^2$

II. A and B are positive integers.

A) 1
B) 2
C) 3
D) 4

19) In the following questions, mark:

1, if statement I alone is sufficient to answer the problem.

2, if statement II alone is sufficient to answer the problem.

3, if statements I and II both taken together are sufficient to answer the problem.

4, if statements I and II taken together are NOT sufficient to answer the problem.

A and B together have 28 percent of the money that C has. How much money does B have?

I. C has ₹7,500 with him. B has more money than A has.

II. The ratio of the money with A and B is 1 : 3.

A) 1
B) 2
C) 3
D) 4

20) Venkat walks 5 km East, then he turns right and walks 4 km, then he turns left and walks 5 km. In which direction is he facing finally?

A) East
B) West
C) North
D) South

Section 4 - PaperI-Teaching Aptitude

21) Which of the following objective is the National program of SSA most dedicated to?

A) Secondary Education
B) Higher Education
C) Primary Education
D) Teacher Eucation

22) During classroom communication, the encoded message by a sender is transferred to the receiver through a
_____

A) sender
B) receiver
C) medium
D) encoder

23) Active agencies are those

A) where both educator and educed are active participants.
B) where both educator and the management are active participants.
C) where both educator and peer grpoup are active participants.
D) where both educand and parents are active participants.

24) Which of the following commissions has reviewed the National Policy on Education 1986?

A) Rammurti Committee
B) Yashpal Committee
C) Kothari Commission
D) Radhakrishnan committee

25) Bloom's Taxonomy includes

A) Three categories
B) Four categories
C) Five categories
D) Six categories

26) A Mathematics teacher is teaching the concept of money to her students. She takes them to the bazaar gives them money and asks them to buy things. Later she asks them to write down what they have bought, how much it cost and how much change they are left with. The teacher is using which of the following methods to teach the students?

A) experimental
B) experiential
C) instructional
D) confrontational

27) Which of the following factors are beyond the control of a teacher during the classtoom behaviour?

A) Interest, Need, Motive and Cognition
B) Interest, Need, Cognition and Mood
C) Interest, Need, Motive and Mood
D) Interest, Cognition, Motive and Mood

28) Which of these statements reflects the brain's role in intelligence according to recent neuro-psychological discoveries?

A) Intelligence is concentrated in the prefrontal lobe.
B) Intelligence is distributed widely across the regions of the brain.
C) The size of the brain determines the depth of intelligence.
D) If the frontal lobe is damaged intelligence is lost

29) Which of the following agencies regulates and monitors special education programme in India?

A) Rehabilitation Council of India
B) Human Resource and Development council of India
C) Ministry of special education
D) National Council of Teacher Education

30) Which of the following factors are important for maintaining good Learning Environment?

A) Indisciplined classroom environment with poor infrastructure
B) Good physical infrastructure with very stringent classroom environment
C) Good physical infrastructure with indiscipline classroom
D) Good physical infrastructure with a democratic classroom environment

Section 5 - PaperII-Physical Science

31) What will be the value of the ratio between product of velocity and radius of 2nd and 3rd orbits in hydrogen atom?

A) (3/2)
B) (2/3)
C) (1/3)
D) 4

32) Balance the chemical equation, $FeSO_4(heat) \rightarrow Fe_2O_2 + SO_2 + SO_3$

A) $4FeSO_4(heat) \rightarrow Fe_2O_2 + SO_2 + SO_3$

B) $3FeSO_4(heat) \rightarrow Fe_2O_2 + SO_2 + SO_3$

C) $2FeSO_4(heat) \rightarrow Fe_2O_3 + SO_2 + SO_3$

D) $6FeSO_4(heat) \rightarrow Fe_2O_2 + SO_2 + SO_3$

33) An electron of charge e and mass m enters in to a uniform magnetic field B. The radius of the circular path of the electron is

A) (eB)/(mv)
B) (ev)/(Bm)
C) (mv)/(eB)
D) (mB)/(ev)

34) Angle of minimum deviation is equal to the angle of the prism of an equilateral glass prism. The angle of incidence at which the minimum deviation will be obtained is

A) 60°
B) 30°
C) 45°
D) $\sin^{-1}(2/3)$

35) A force F acting on a particle varies with the position x given by the equation F = 5x. The work done by the force in displacing the particle from x = -2m to x = 0 is:

A) - 10 J
B) - 20 J
C) 10 J
D) 0 J

36) Which among the following will be the number of revolutions of an electron in the 4th orbit of a Li^{2+} ion per second?

A) $3me^4/(16h^2)$
B) $9me^2/(15h^3)$
C) $5m^2e^4/(16h^3)$
D) $9me^4/(16h^3)$

37) What will be the de Broglie wavelength of an electron moving in a potential of 5 V?

A) 2.5×10^{-15} m
B) 3.7×10^{-10} m
C) 5.5×10^{-10} m
D) 1.8×10^{-12} m

38) When iron is dipped in conc. HNO_3, it becomes chemically inert or passive due to the formation of a layer of iron oxide (Fe_3O_4) on its surface. What will be the equation for this reaction?

A) $3Fe + 8HNO_3 \rightarrow Fe_3O_4 + 8NO_2 + 4H_2O$

B) $3Fe + 2HNO_3 \rightarrow Fe_3O_4 + NO_2 + H_2O$

C) $Fe + HNO_3 \rightarrow Fe(NO_3)_3 + NO_2 + H_2O$

D) $Fe + 8HNO_3 \rightarrow Fe(NO_3)_3 + 2NO_2 + 4H_2O$

39) Which among the following occurs in the given reaction?
$2PbO + C \rightarrow 2Pb + CO_2$
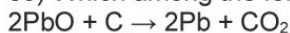
A) Lead is getting reduced
B) Lead dioxide is getting oxidized
C) Carbon is getting oxidized
D) Lead oxide is getting reduced

40) A wire of length L and three identical cells of negligible internal resistance are connected in series. Due to this current, the temperature of the wire is raised by ΔT in time t. A number N of similar cells is now connected in series with a wire of same material and cross section but of length 2L. The temperature of wire is raised by the same amount ΔT in the same time t. The value of N is

A) 3
B) 4
C) 5
D) 6

41) Two heaters designed for the same voltage V have different power ratings. When connected individually across a source of voltage V, they produce H amount of heat each in times t_1 and t_2 respectively. When used together across the same source, they produce H amount of heat in time t.

A) If they are in series, $t = t_1 + t_2$
B) If they are in series, $t = (t_1 + t_2)/2$
C) If they are in parallel, $t = t_1 t_2/2(t_1 + t_2)$
D) If they are in parallel, $t = t_1 t_2/(t_1 - t_2)$

---

42) Three closed vessels A, B and C are at the same temperature T and contain gases which obey the Maxwellian distribution of velocities. Vessel A contains only O_2, B only N_2 and C a mixture of equal quantities of O_2 and N_2. If the average speed of the O_2 molecules in vessel A is v_1, that of the N_2 molecules in vessel B is v_2, the average speed of the O_2 molecules in vessel C is

A) $(v_1+v_2)/2$
B) v_1
C) $\sqrt{(v_1 v_2)}$
D) $\sqrt{(3kT/M)}$ where, M is the mass of an oxygen molecule

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43) A ray of light is incident on a plane mirror along a vector $i + j - k$. The normal on incidence point is along $i + j$. The unit vector along the reflected ray is

A) $(- i - j - k)/\sqrt{3}$
B) $(- i - j + k)/\sqrt{3}$
C) $(i - j - k)/\sqrt{3}$
D) $(i + j - k)/\sqrt{3}$

---

44) Equal mass of three liquids are kept in three identical cylindrical vessels A, B and C. The densities are d_1, d_2 & d_3 with $d_1 < d_2 < d_3$. The force on the base will be

A) Maximum in vessel A
B) Maximum in vessel B
C) Maximum in vessel C
D) Equal in all vessels

---

45) A fire extinguishing pipe of cross sectional area 10^{-2} m^2 throws water on a vertical wall with a horizontal velocity of 0.2 m/s. Find the force on the water if the water returns back with a horizontal velocity of 0.1 m/s, density of water = 1000 kg/m^3

A) 0.8 N
B) 0.6 N
C) 0.2 N
D) 1 N

46) Which among the following is the radial wave function of a hydrogen-like 2s orbital? (Symbols/notations carry their usual meaning)

A) $R = (1/2\sqrt{6})(Z/a_0)^{3/2}(2-Zr/a_0)e^{-Zr/2ao}$

B) $R = (1/2\sqrt{2})(Z/a_0)^{3/2}(Zr/a_0)e^{-Zr/2ao}$

C) $R = (1/2\sqrt{6})(Z/a_0)^{3/2}(Zr/a_0)e^{-Zr/2ao}$

D) $R = (1/2\sqrt{2})(Z/a_0)^{3/2}(2-Zr/a_0)e^{-Zr/2ao}$

47) An example for balanced combination reaction is

A) $H_2 + Cl_2 \rightarrow 2HCl$
B) $H + Cl_2 \rightarrow 2HCl$
C) $H_2 + Cl_2 \rightarrow HCl$
D) $H_2 + Cl_2 \rightarrow H_2Cl$

48) A particle of mass m and charge q moves with a constant velocity v along the positive x direction. It enters a region containing a uniform magnetic field B directed along the negative z direction extending from x = a to x = b. The minimum value of v required so that the particle can just enter the region x > b is

A) v > Bq(b-a)/m
B) v > Bqa/m
C) v > Bq(b+a)/m
D) v > Bqb/m

49) A train is moving on a straight track with speed 20 ms⁻¹. It is blowing its whistle at the frequency of 1000 Hz. The percentage change in the frequency heard by a person standing near the track as the train passes him is close to (speed of sound = 320 ms⁻¹)

A) 12%
B) 6%
C) 18%
D) 24%

50) A 25 g bullet is fired with a velocity of 400 m/s in to a sand bag of mass 4.975 kg suspended by a rope. The bullet gets embedded in to the bag. The loss of kinetic energy is

A) 1990 J
B) 2110 J
C) 19 J
D) 8 J

Section 6 - PaperII-Biological Science

51) Which among the following is the primary photosynthetic pigment?

A) Chlorophyll a
B) Chlorophyll d
C) Chlorophyll c
D) Xanthophyll

52) Read the following statements and choose the CORRECT option.

Statement I: Cell membrane is selectively permeable to lipids and its derivatives.

Statement II: Cell membrane is fully permeable to water.

Statement III: Cell membrane is impermeable to gases like oxygen, carbon dioxide etc.

A) Only statement III is correct
B) Statement II is correct but statements I & III are incorrect
C) Only statement I is correct
D) All are I, II and III are correct statements

53) Animals categorized under which of the following phylums have radial symmetry in their adult form?

A) Porifera
B) Mollusca
C) Hemichordata
D) Echinodermata

54) Biological communities together with physical environments connected for the exchanges of energy and recycling of nutrients is called

A) Ecosystem
B) Communities
C) Biomes
D) Biosphere

55) Which of the following options will be a result of overgrazing in general?

A) Reduction in productivity of soil
B) Increase in agricultural productivity
C) Depletion and erosion of soil
D) Major noise pollution

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56) In flowering plants, the zygotes finally develop into

A) Embryo
B) Seed
C) Ovary
D) Fruits

57) The main function of mammalian corpus luteum is to produce

A) Relaxin
B) Prolactin
C) Estrogen
D) Progesterone

58) The main constituent of a primary plant cell wall is

A) Cellulose microfibrils
B) N-acetyl glucosamine
C) Cholesterol
D) Integral protein

59) Which of the following statements is INCORRECT with respect to Cilia and Flagella as cell organelles?

A)   Cilia and flagella are the most common organelles for locomotion in unicellular organisms
B)   Organisms with Flagella can move faster and more efficiently than the organisms with Cilia
C)   Beating pattern of Flagella involves circular, wave-like or propeller-like motion
D)   Flagella is comparatively longer in length than Cilia and usually found in both prokaryotic and eukaryotic cells

60) The Mammals are usually characterized by:

A) Mammary glands only
B) Mammary glands and external ears
C) Sweat glands and hollow bones
D) Mammary glands and hollow bones

61) Which of the following salient features is common in the classes of Aves and Mammals under kingdom Animalia?

A) Two-chambered Heart
B) Cold-blooded
C) Poikilothermous
D) Homoiothermous

62) Black-foot disease is caused due to ground water contaminated with excess of

A) Cadmium
B) Lead
C) Arsenic
D) Mercury

63) Which of the following is the major source of phosphate pollutions in water bodies?

A) Paper manufacturing industries
B) Food and vegetable wastes
C) Detergents
D) Petroleum

64) Which of the following two ecosystems make a zone of transition known as Estuary?

A) Lake and River
B) Lake and Land
C) River and Land
D) River and Ocean

65) The NBPGR played a pivotal role in the improvement of various crop plants and diversification and development of agriculture in India. What is the full form of NBPGR?

A) National Board of Plant Genetic Reforms
B) National Bureau of Plant Genetic Resources
C) National Bureau of Plant Genetic Recreation
D) National Bureau of Plant Generation Resources

66) The respiratory quotient of tripalmitin as respiratory substrate is

A) 0.9
B) 0.7
C) 1
D) 1.3

67) Read the following statements regarding prokaryotes and eukaryotes:

a. DNA complexed with histones is found only in eukaryotes.

b. Prokaryotic cell wall is made up of murein.

c. Microtubules are present in prokaryotes.

d. Prokaryotes have membrane bound organelles.

Choose the option with all INCORRECT statements

A) a and b are incorrect
B) a and c are incorrect
C) c and d are incorrect
D) d and b are incorrect

---

68) Read the following statements:

a. Monerans are multicellular eukaryotes which are considered as most primitive type organisms.

b. Basidiomycetes are known as club fungi and undergo sexual reproduction.

c. Paramecium is a single celled eukaryote which belongs to kingdom Protista.

Choose the option with all CORRECT statements:

A) All a, b and c are correct
B) b and c are correct
C) Only b is correct
D) Only c is correct

---

69) Tiger census is often based on its

A) individual counting
B) sample of blood
C) sample of urine
D) sample of faecal pellets

70) Read the following statements and choose the CORRECT option.

(i) The IUCN Red List Categories define the extinction risk of species assessed all around the world.

(ii) Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) species are considered to be threatened with global extinction.

A) (i) is TRUE and (ii) is TRUE
B) (i) is TRUE and (ii) is FALSE
C) (i) is FALSE and (ii) is TRUE
D) (i) is FALSE and (ii) is FALSE

Section 7 - PaperII-Mathematics

71) If the perimeter of a rectangular field is 34 m and the area is 60 sq. m, then what is the length of each of the longer side?

A) 5 m
B) 6 m
C) 10 m
D) 12 m

72) What are the roots of the quadratic equation $4x^2 - 12x + 9 = 0$?

A) 2 and 3
B) 3/2 and -3/2
C) 3/2 and 3/2
D) 4 and 3

73) What is the least positive integer n for which $n^4 + (n+1)^4$ is composite?

A) 5
B) 4
C) 3
D) 2

74) What will be the intersection of set of all natural numbers and set of all rational numbers?

A) Set of all whole numbers
B) Set of all integers
C) Set of natural numbers
D) Singleton set with 1

75) Find the value of log 1000

A) 1
B) 2
C) 3
D) 4

76) If sin2Θ=1, then what is the value of $(\sin\theta + \cos\theta)^2$?

A) 1
B) 2
C) 3
D) 4

77) The perimeter of a rhombus with is 40 m. If the length of one of the diagonals is 12 cm, then what is the area the rhombus?

A) 72 sq. cm
B) 80 sq. cm
C) 88 sq cm
D) 96 sq sm

78) What is the sum of the roots of the polynomial equation $x^4 - 3x^3 + 5x^2 - 6x + 4 = 0$?

A) 3
B) 4
C) 5
D) 6

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79) The rational form of the repeating decimal 0.374374… is

A) $\dfrac{374}{997}$

B) $\dfrac{374}{998}$

C) $\dfrac{374}{999}$

D) $\dfrac{374}{1000}$

80) Let A={1,3,5,7,9} and Z be the set of integers and f : A →B such that f(x) = x^2. What is the image of f(A)?

A) {1,9,25,36}
B) {1,9,25,49,81}
C) {1,4,9,16,25}
D) {1,9,25,49,64}

81) What is the value of log 50 given that log 2 = 0.3010?

A) 1.699
B) 0.849
C) 1.366
D) 0.788

82) If log 2 = 0.3010 and log 3 = 0.4771, then log 12 =

A) 1.0791
B) 1.0341
C) 1.0563
D) 1.0371

83) What is the value of cos75 degrees?

A) $(\sqrt{3}+1)/2\sqrt{2}$
B) $(\sqrt{3}-1)/2\sqrt{2}$
C) $(\sqrt{3}-2)/2\sqrt{3}$
D) $(\sqrt{3}+1)/2\sqrt{3}$

84) The angle of elevation of a top of a mountain changes from 30 degrees to 60 degrees after walking 2 km towards the mountain. What is the vertical length of the mountain?

A) 1000 m
B) 1200 m
C) 1542 m
D) 1732 m

85) The shaded region in the figure above represents a rectangular frame with length 18 inches and width 15 inches. The frame encloses a rectangular picture that has the same area as the frame itself. If the length and width of the picture have the same ratio as the length and width of the frame, then what is the length of the picture, in inches?
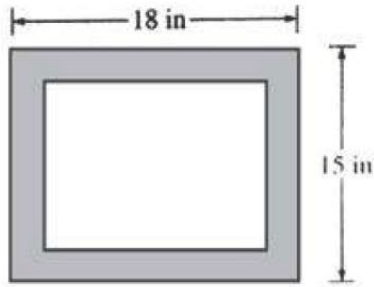
Note: Figure not drawn to scale.

A) $9\sqrt{2}$

B) $\dfrac{3}{2}$

C) $\dfrac{9}{\sqrt{2}}$

D) $\dfrac{9}{2}$

86) If $\alpha \text{ and } \beta$ are the roots of $ax^2 + bx + c = 0$, then the equation whose roots are $2 + \alpha, 2 + \beta$ is

A) $ax^2 + x(4a-b) + 4a - 2b + c = 0$

B) $ax^2 + x(4a-b) + 4a + 2b + c = 0$

C) $ax^2 + x(b-4a) + 4a + 2b + c = 0$

D) $ax^2 + x(b-4a) + 4a - 2b + c = 0$

87) When K divided by M, the remainder is 7. But, when K^2 is divided by M, the remainder is 1. What is the maximum value of M?

A) 8
B) 48
C) 64
D) 72

88) If f(0) = -1, f(1) = 2 and f(n) = f(n-1) - f(n-2) n ≥ 2, then what is the value of f(7)?

A) -2
B) 2
C) -1
D) 1

89) $\dfrac{1}{log_3 84} + \dfrac{1}{log_4 84} + \dfrac{1}{log_7 84} =$

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A) 1
B) 3
C) 4
D) 7

90) Two vertical poles are 400 m apart and the height of one is double that of the other. From the middle point of the line joining their feet, an observer finds the angular elevations of their tops to be complementary. What are the heights (approximately) of the two poles?

A) 141 m & 282 m
B) 130 m & 260 m
C) 70.5 m & 141 m
D) 65 m & 130 m

Question Paper No:	62222_23
Answer Key:	

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1	B	31	B	61	D
2	D	32	C	62	C
3	C	33	C	63	C
4	A	34	A	64	D
5	B	35	A	65	B
6	B	36	D	66	B
7	C	37	C	67	C
8	B	38	A	68	B
9	A	39	A	69	D
10	A	40	D	70	A
11	A	41	A	71	D
12	A	42	B	72	C
13	B	43	A	73	A
14	A	44	D	74	C
15	B	45	B	75	C
16	A	46	D	76	C
17	A	47	A	77	D
18	C	48	A	78	A
19	C	49	A	79	C
20	A	50	A	80	B
21	C	51	A	81	A
22	C	52	C	82	A
23	A	53	D	83	B
24	A	54	A	84	D
25	D	55	C	85	A
26	B	56	A	86	D
27	C	57	D	87	B
28	B	58	A	88	B
29	A	59	B	89	A
30	D	60	B	90	A

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