



Duration: 2 Hrs. Maximun Marks: 320

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

**Things NOT ALLOWED in EXAM HALL:** Blank Paper, clipboard, log table, slide rule, calculator, camera, mobile and any electronic or electrical gadget. If you are carrying any of these then keep them at a place specified by invigilator at your own risk.

#### **INSTRUCTIONS**

- 1. This booklet is your Question Paper. DO NOT break seal of Booklet until the invigilator instructs to do so.
- 2. Fill your TALLENTEX Form No. in the space provided on the top of this page.
- 3. The Answer Sheet is provided to you separately which is a machine readable Optical Response Sheet (ORS). You have to mark your answers in the ORS by darkening bubble, as per your answer choice, by using black ball point pen.
- 4. Total Questions to be Attempted 80. Part-I: 20 Questions & Part-II: 60 Questions.
- 5. After breaking the Question Paper seal, check the following:
  - a. There are 16 pages in the booklet containing question no. 1 to 80 under 2 Parts i.e. Part-I & Part-II.
  - b. Part-I contains total 20 questions of IQ (Mental Ability).
  - c. Part-II contains total 60 questions under 4 sections which are Section (A): Physics, Section (B): Chemistry, Section(C): Biology & Section (D): Mathematics.
- 6. Marking Scheme:
  - a. If darkened bubble is RIGHT answer: 04 Marks.
  - b. If darkened bubble is WRONG answer: -01 Mark (Minus One Mark).
  - c. If no bubble is darkened in any question: No Mark.
- 7. Think wisely before darkening bubble as there is negative marking for wrong answer.
- 8. If you are found involved in cheating or disturbing others then your ORS will be cancelled.
- 9. Do not put any stain on ORS and hand it over back properly to the invigilator.
- 10. You can take along the question paper after the test is over.

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(1) 311

(2) 307

## **PART-I**

# IQ (MENTAL ABILITY)

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

of v	which ONLY ONE	E is correct.					
1.	Each question co	onsists of five statements f	followed by options cons	sting of three statements put tog	gether		
	in a specific order. Choose the option which indicates a valid argument, that is where the third statement						
	is a conclusion	is a conclusion drawn from the preceding two statements.					
	A. Apples are	not sweets.					
	B. Some apples	s are sweets.					
	C. All sweets a	are tasty.					
	D. Some apples	s are not tasty.					
	E. No apple is	tasty.					
	(1) CEA	(2) BDC	(3) CBD	(4) EAC			
2.	How many tria	ngles are there in the fol	lowing figure ?				
	(1) 25	(2) 20	(3) 31	(4) 29			
	Directions (Q.3	& Q.4): In a school, there	e were five teachers. A ar	d B were teaching Hindi and En	ıglish.		
	C and B were	teaching English and Ge	ography. D and A were	e teaching Mathematics and F	Iindi.		
	E and B were t	teaching History and Free	nch.				
<b>3.</b>	Who among the	e teachers was teaching i	maximum number of su	bjects?			
	(1) A	(2) B	(3) C	(4) D			
4.	D, B and A we	ere teaching which of the	following subjects ?				
	(1) English onl	у	(2) Hindi and E	nglish			
	(3) English and	d Geography	(4) Hindi only				
5.	How many 7s in series?	mmediately preceded by 6	but not immediately fol	owed by 4 are there in the follo	owing		
	7 4 2 7 6 4 3 6	6753578437672	2 4 0 6 7 4 3				
	(1) One	(2) Two	(3) Four	(4) Six			
6.	Find the next to	erm in the series : 10, 19	, 40, 77, 158, ?				

(3) 301

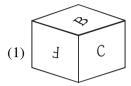


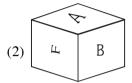
- 7. When the time by the watch is 20 minutes past 7, the angle between the hands of the watch is
  - $(1) 100^{\circ}$
- $(2) 90^{\circ}$
- $(3) 80^{\circ}$
- (4) 95°
- 8. If 12th March 1986 was Wednesday, then 31st March 1994 would be
  - (1) Wednesday

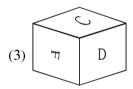
(2) Thursday

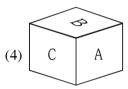
(3) Friday

- (4) Saturday
- 9. Of the following figures, which figure does not belong to the cube?

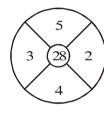


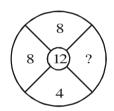






10. Find the missing term in the following Figure





 $(1) \ 3$ 

(2) 9

(3) 1

(4) 2

**Direction (Q.11 & Q.12):** Read the following information carefully and answer the questions given below it

- (i) P, Q, R, S, T and U are six members in a family in which there are two married couples.
- (ii) T, a teacher is married to the doctor who is mother of R and U.
- (iii) Q, the laywer is married to P.
- (iv) P has one son and one grandson.
- (v) Of the two married ladies one is a housewife.
- (vi) There is also one student and male engineer in the family.
- **11.** How is P related to R?
  - (1) Grandfather

(2) Mother

(3) Sister

(4) Grandmother

- **12.** How is R related to U?
  - (1) Brother

(2) Sister

(3) Brother or Sister

(4) Data inadequate



13.  $P \neq Q$  implies that Q is standing 2 km to the right of P

P\*Q implies that Q is standing 2 km to the left of P

P@Q implies that Q is standing 2 km below P

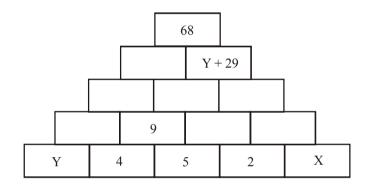
If F≠S @ B\*V, in which direction is F with respect to V?

(1) North

(2) South

(3) East

- (4) West
- **14.** In the figure, number in any cell is obtained by adding two numbers in the cells directly below it. The value of X-Y is



(1) 2

(2) 3

(3) 4

- (4) 5
- 15. In a game "Pass the ball" position of some players are as follows

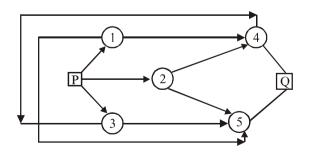
'A' is 20 meters to the north of 'B' who is 18 meters to the east of 'C'. If the ball was initially with B and is passed to C, in which direction A is to C?

(1) North-East

(2) North-West

(3) South-East

- (4) None of these
- **16.** What is the number of routes from P to Q?



(1) 5

(2) 6

(3) 9



17. In the following question below three statements (I, II, III) are given followed by four conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Choose the correct options.

Statements: (I) Some drivers are technicians.

- (II) All technicians are engineers.
- (III) Some engineers are lecturers.

Conclusions: (A) Some technicians are lecturers.

- (B) Some lecturers are drivers.
- (C) All engineers are technicians.
- (D) Some engineers are drivers.

(1) Only C follows

(2) Only D follows

(3) Only C and D follows

- (4) None of these
- 18. Symbols are to be coded as follows in a language:

Symbol: @ \$ # \* % £ + X = ?

Code: F R H S E A D N O K

Following conditions are observed here:

- (i) If the middle symbol is £ then it is to be coded as L
- (ii) If the first symbol is + and the last symbol is # both are to be coded as 6
- (iii) If the first symbol is % and the last symbol is \$ then both are to be coded as 4
- (iv) If the first and last symbol are @ then both are to be coded as 2

Applying these conditions, find out the correct code for the symbols in the question given below.

% @ = £ + \*\$

(1) 4 F O L D S 4

(2) E F O L D S R

(3) 4 FO A D S 4

- (4) E F O L D S 6
- 19. 343 cubes of similar size are arranged in the form of a bigger cube (7 cubes on each side, i.e. 7×7×7) and kept at the corner of a room, all the exposed surfaces are painted then How many of the cubes have at least 2 faces painted?

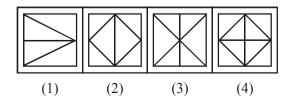
(1) 19

(2) 144

(3) 120

- (4) None of these
- 20. In the following question, choose the alternative figure in which the question figure (X) is embedded.





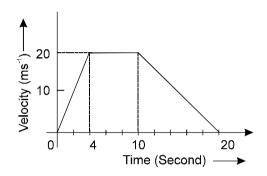


#### **PART-II**

## **SECTION-A: PHYSICS**

This section contains **10 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

**21.** The figure represents the velocity-time graph of body moving in a straight line. How much distance does it travel during the last 10 seconds?



- (1) 40 m
- (2) 80 m
- (3) 100 m
- (4) 220 m
- 22. A force of 15 N gives a mass  $m_1$  an acceleration of 3 m/sec<sup>2</sup> and mass  $m_2$  an acceleration of 5 m/sec<sup>2</sup>. What acceleration would it give if both the masses were tied together?
  - (1) 3 m/sec<sup>2</sup>
- (2) 5  $m/sec^2$
- (3)  $4 \text{ m/sec}^2$
- (4) None of these

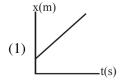
- 23. The value of universal gravitational constant
  - (1) Changes with change of place
- (2) Does not change from place to place

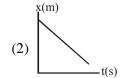
(3) Becomes more at night

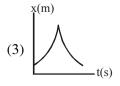
- (4) Becomes more during the day
- 24. An athlete runs over a certain distance before taking a long jump, because due to this
  - (1) his mass gets decreased, so he can jump over a long distance
  - (2) he gains inertia of motion, so he can take a longer jump
  - (3) he gets the power of God, so he can take a longer jump
  - (4) he follows law of conservation of kinetic energy
- 25. The position of an object in equal time intervals is shown in figure.

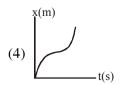


Which graph below correctly represents position versus time for this object?











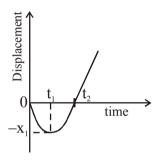
- 26. What is the velocity of a body of mass 100 g having K.E. of 20 J?
  - (1) 2 m/s
- (2) 20 m/s
- (3) 40 m/s
- (4) None of these
- 27. As the frequency of a source decreases in a given medium, the wavelength of a periodic longitudinal wave
  - (1) increases, but the speed of the wave remains constant.
  - (2) increases, and the speed of the wave increases.
  - (3) decreases, but the speed of the wave remains constant.
  - (4) decreases, and the speed of the wave decreases.
- 28. What will be the value of acceleration due to gravity at a height 2R from the surface of earth?
  - (1)  $1.1 \text{ m/s}^2$

(2)  $2.2 \text{ m/s}^2$ 

 $(3) 3.3 \text{ m/s}^2$ 

 $(4) 4.9 \text{ m/s}^2$ 

**29.** Mark the incorrect statement.



- (1) From time t = 0 to  $t = t_1$ , speed of the particle is decreasing
- (2) From  $t = t_1$  to  $t = t_2$ , speed of the particle is increasing
- (3) Initial velocity of the particle is negative
- (4) At  $t = t_1$ , velocity of the particle is maximum
- **30.** In the table below, which planetary system has the greatest gravitational force acting between the planet and its moon?

Mass and Distance Data for Planets and Their Moons				
Planetary System	Planet mass (in kg)	Moon mass (in kg)	Distance from planet (in km)	
1	$600 \times 10^{22}$	$6 \times 10^{22}$	$2 \times 10^{6}$	
2	$600 \times 10^{22}$	$6 \times 10^{22}$	$3 \times 10^{6}$	
3	$600 \times 10^{22}$	$12 \times 10^{22}$	$2 \times 10^{6}$	
4	$600 \times 10^{22}$	$12 \times 10^{22}$	$1 \times 10^{6}$	

(1) 1

(2) 2

(3) 3



## **SECTION-B: CHEMISTRY**

This section contains **10 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

- **31.** An element "X" after reacting with acids liberate hydrogen gas and can displace Lead and Tin from their salt solution. The metal 'X' is:
  - (1) Copper

(2) Gold

(3) Nickel

(4) Mercury

32. Match Column-I with Column-II and select the correct answer using the code given below the columns.

	Column-I		Column-II
(A)	Hardest Non-metal	(p)	Graphite
(B)	Non-metal conducts electricity	(q)	Sulphur
(C)	Non-metal with lustre	(r)	Diamond (Carbon)
(D)	Non-metal used as fungicide	(s)	Iodine

- (1) A  $\rightarrow$  (r); B  $\rightarrow$  (p); C  $\rightarrow$  (s); D  $\rightarrow$  (q)
- (2) A  $\rightarrow$  (q); B  $\rightarrow$  (p); C  $\rightarrow$  (s);D  $\rightarrow$  (r)
- (3) A  $\rightarrow$  (p); B  $\rightarrow$  (r); C  $\rightarrow$  (s); D  $\rightarrow$  (q)
- (4) A  $\rightarrow$  (r); B  $\rightarrow$  (p); C  $\rightarrow$  (q); D  $\rightarrow$  (s)
- 33. At heights if water boils at 70°C, then the cooking of pulse requires
  - (1) More time and more heat

(2) Less time and more heat

(3) Less time and less heat

(4) More time and less heat

- **34.** Benzene and water can be separated by
  - (1) Separating funnel

(2) Sublimation

(3) Filtration

- (4) None of these
- 35. In presence of water, ignition temperature of paper
  - (1) Decreases

(2) Increases

(3) Remains constant

- (4) Can decrease or increase
- **36.** Study the following equations and mark the correct option.

$$2A + 2B \rightarrow 2AOH + H_2$$

$$S + O_2 \rightarrow C$$

$$C + B \rightarrow D$$

	A	В	C	D
(1)	Na	$\mathrm{H_2O}$	$SO_2$	$H_2SO_3$
(2)	Na	$H_2O$	$SO_2$	$H_2SO_4$

(3) K

 $H_2O$ 

SO,

H<sub>2</sub>SO<sub>4</sub> H<sub>2</sub>SO<sub>3</sub>

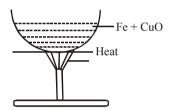
(4) K

H,O

 $SO_3$ 

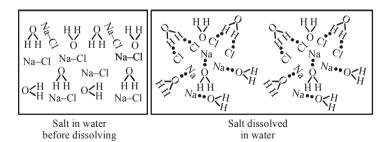


- 37. When the vapour pressure of a liquid is equal to its atmospheric pressure, then it
  - (1) freezes
  - (2) evaporates
  - (3) boils
  - (4) does not undergo any change
- 38. Simple distillation can be best used to separate
  - (1) A mixture of benzene (boiling point 80°C) and toluene (boiling point 100°C)
  - (2) A mixture of ether (boiling point 35°C) and toluene (boiling point 110°C)
  - (3) A mixture of ethanol (boiling point 78°C) and water (boiling point 100°C)
  - (4) None of these
- 39. Take a mixture of powdered iron and copper oxide. Heat the mixture. The mixture starts glowing with a shining brown colour and it glows even after the burner is removed. Iron oxide and copper are formed during the reaction. It is observed that iron takes away oxygen from copper and acts as a reducing agent. What general observation can be made from the above experiment?



- (1) When a metal is heated with the oxide of a more reactive metal it will act as a reducing agent
- (2) A more reactive metal can displace the less reactive metal from its oxide on heating
- (3) The reaction of more reactive metal with an oxide of less reactive metal is endothermic
- (4) No general statement can be given

**40.** 



According to the diagram, which statement best describes what happens to ionic compounds when they are dissolved?

- (1) They are pulled apart by water molecules
- (2) They get larger in size
- (3) They move faster
- (4) They become a new compound



## **SECTION-C: BIOLOGY**

This section contains 20 Multiple Choice Questions. Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

Identify the following organism and state to which phylum it belongs?



- (1) Coelenterata
- (2) Porifera
- (3) Platyhelminthes
- (4) Annelida
- 42. Which of the following is causative agent of peptic ulcer?
  - (1) Helicobacter pylori

(2) Leishmania

(3) Trypanosoma

- (4) Roundworm
- 43. Which of the following muscle is responsible for movement of food in alimentary canal?
  - (1) Smooth Muscle
- (2) Striated Muscle
- (3) Voluntary Muscle (4) Cardiac Muscle
- 44. Which of these is not related to endoplasmic reticulum?
  - (1) It helps in the exchange of materials between nucleus and cytoplasm.
  - (2) It transports material between various regions in cytoplasm.
  - (3) It is the site of energy generation.
  - (4) It is the site for some biochemical activities of the cell.
- Woody female cones, like the one shown below, and male cones grow on the same tree. In which division of seeded plants would they be found?



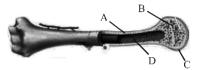
- (1) Cycas
- (2) Pinus
- (3) Fern
- (4) Ginkgo
- The process of cross breeding between two different varieties of crop plants each having a desired 46. characteristic is known as
  - (1) Selection
- (2) Hybridisation
- (3) Emasculation
- (4) Introduction
- What can a grower do to produce plants that are attractive and full of side branches? 47.
  - (1) Pinch off the apical meristem to decrease the amount of auxin.
  - (2) Pinch off the apical meristem to increase the amount of auxin.
  - (3) Pinch off the intercalary meristems to increase the amount of auxin.
  - (4) Pinch off the intercalary meristems to decrease the amount of auxin.



- 48. Crossing over that results in genetic recombination in higher organisms occurs between
  - (1) Non sister chromatids of a bivalent
- (2) Two daughter nuclei

(3) Two different bivalent

- (4) Sister chromatids of a bivalent
- **49.** *Peripatus* is a connecting link between
  - (1) Coelenterata and Porifera
  - (2) Ctenophora and Platyhelminthes
  - (3) Mollusca and Echinodermata
  - (4) Annelida and Arthropoda
- **50.** What type of tissue is located at the area labelled D in the diagram below?



(1) Compact bone

(2) Spongy bone

(3) Bone marrow

- (4) Cartilage
- 51. Match the column I with column II and select the correct answer from the codes given below.

	Column I		Column II
(a)	Plague	(i)	Rubeola virus
(b)	Whooping cough	(ii)	Wuchereria bancrofti
(c)	Measles	(iii)	Salmonella typhi
(d)	Elephantiasis	(iv)	Yersinia pestis
		(v)	Bordetella pertusis

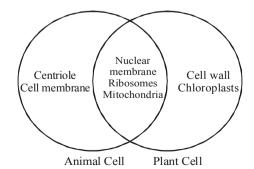
	a	b	c	d
(1)	(iv)	(v)	(i)	(ii)
(2)	(i)	(v)	(ii)	(iv)
(3)	(iv)	(v)	(ii)	(i)
(4)	(i)	(iii)	(v)	(ii)

- 52. In which one of the following would you expect to find glyoxysomes?
  - (1) Endosperm of wheat

(2) Endosperm of castor

(3) Palisade cells in leaf

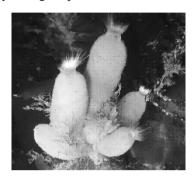
- (4) Root hairs
- **53.** The diagram below compares organelles and other cell parts found in animal and plant cells. Which organelle or other cell part is incorrectly placed in the diagram?



- (1) Ribosome
- (2) Mitochondria
- (3) Cell membrane
- (4) Nuclear membrane



- **54.** What happened when we inoculated Rhizobium in wheat field?
  - (1) No increase in production (nitrogen content of soil remains same)
  - (2) A lot of increase in production (nitrogen content of soil increases)
  - (3) Fertility of soil decreases
  - (4) Fertility of soil increases
- 55. In the given figure an animal is shown which is non-motile, attached to some support & there are holes all over the body, identify the group to which this animal belong.



- (1) Porifera
- (2) Coelenterata
- (3) Platyhelminthes
- (4) Arthropoda

- **56.** Why are methanogens called as obligate anaerobes?
  - (1) They live in salty environments.
  - (2) They die in the presence of oxygen.
  - (3) They give off carbon dioxide as a waste product.
  - (4) They carry out photosynthesis using chlorophyll.
- 57. How do the daughter cells at the end of mitosis and cytokinesis compare with their parent cell when it was in G<sub>1</sub> of the cell cycle?
  - (1) The daughter cells have half the amount of cytoplasm and half the amount of DNA
  - (2) The daughter cells have half the number of chromosomes and half the amount of DNA
  - (3) The daughter cells have the same number of chromosomes and half the amount of DNA
  - (4) The daughter cells have the same number of chromosomes and same amount of DNA
- **58.** Which of the following is an example of a weed of Rabi season that infest wheat crop?
  - (1) Chenopodium
- (2) Cock's comb
- (3) Gram
- (4) None of the above
- **59.** Following are a few definitions of osmosis. Read carefully and select the most appropriate definition.
  - (1) Movement of solvent molecules from a region of higher concentration to a region of lower concentration through a semipermeable membrane.
  - (2) Movement of solute molecules from its higher concentration to lower concentration.
  - (3) Movement of solvent molecules from higher concentration to lower concentration through a permeable membrane.
  - (4) Movement of solute molecules from lower concentration to higher concentration through a semipermeable membrane.
- 60. Vaccination
  - (1) can control every disease.
  - (2) develops resistance against the attack of a disease.
  - (3) kills all the disease causing organisms in the area by using antibodies.
  - (4) all of these



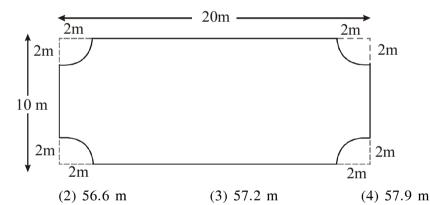
### **SECTION-D: MATHEMATICS**

This section contains 20 Multiple Choice Questions. Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

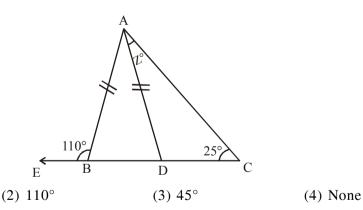
- **61.** A copper wire, when bent in the form of a square, encloses an area of 484 cm<sup>2</sup>. If the same wire is bent in the form of a circle, the radius of the circle will be
- (2) 14 cm
- (3) 15 cm
- If A : B = 2 : 3, B : C = 4 : 5, and C : D = 6 : 7 then A : B : C : D is **62.**
- (1) 16: 22: 30: 35 (2) 16: 24: 15: 35 (3) 16: 24: 30: 35
- (4) 18:24:30:35
- A car travels the first  $\frac{1}{3}$  of a certain distance with a speed of 10 km/h, the next one third distance 63. with a speed of 20 km/h and last  $\frac{1}{3}$  distance with a speed of 60 km/h. The average speed of the car for the whole journey is
  - (1) 18 km/h

(1) 56.0 m

- (2) 24 km/h
- (3) 30 km/h
- (4) 36 km/h
- Evaluate the perimeter of the figure given below to one decimal place. 64.



In the figure, given below find  $\angle Z$ . **65.** 



- The rates of simple interest in two banks A and B are in the ratio 5:4. A person wants to deposit his **66.** total savings in two banks in such a way that he received equal half yearly interest from both. He should deposit the saving in banks A and B in the ratio
  - (1) 5:2

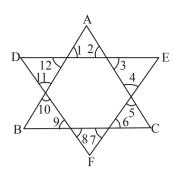
 $(1) 40^{\circ}$ 

- (2) 2:5
- (3) 4:5
- (4) 5:4
- If |x + 3| = 2 and |y+8| = 3 then find least value of |xy|**67.**

- (2) -5



68. In the adjoining figure,  $\angle 1 + \angle 2 + \dots \angle 12$  equals



- $(1) 180^{\circ}$
- (2) 540°
- $(3) 720^{\circ}$
- (4) None of these
- 69. If the perimeter of an isosceles right triangle is 2P, then its area is
- (1)  $\left(2+\sqrt{2}\right)P^2$  (2)  $\left(2-\sqrt{2}\right)P^2$  (3)  $\frac{\left(3-2\sqrt{2}\right)}{4}P^2$  (4)  $\left(3-2\sqrt{2}\right)P^2$
- **70.** A rail engine is moving at a uniform speed of 30 km per hour towards a place "X". When the engine is still 20 km away from "X", an insect starts at "X" and shuttles between "X" and engine at a uniform speed of 42 km per hour. The total distance travelled by the insect, by the time engine reaches "X" is
  - (1) 28 km
- (2) 30 km
- (3) 20 km
- (4) 42 km

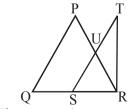
71. The value of

$$\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \frac{1}{\sqrt{4}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{8}} + \frac{1}{\sqrt{8}+\sqrt{9}} \text{ is } \dots$$
(1) 0 (2) 1 (3) 2 (4) 4

- **72.** From each corner of a square sheet of side 8 cm, a square of side y cm is cut. The remaining sheet is folded into a cuboid. The minimum possible volume of the cuboid formed is M cubic cm. If y is an integer, then find M.
  - (1) 32
- (2) 18
- (3) 36
- (4) 12
- A water tank of dimensions  $11m \times 6m \times 5m$  is full of water. The tank is emptied through a pipe of **73.** cross section 33 cm<sup>2</sup> in 20 hours. Find the rate of water (in kmph).

(2) 5

- (3) 6
- (4) 10
- In the given figure,  $\angle QPR = 70^{\circ}$ ,  $\angle QRT = 80^{\circ}$ ,  $\angle SUR = 80^{\circ}$  and  $\angle PQR = 60^{\circ}$ . How many isosceles **74.** triangles are there in the given figure?



(Figure not drawn to scale)

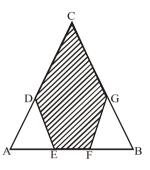
(1) 1

(2) 2

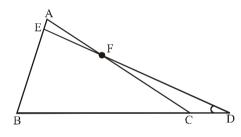
(3) 3



- Let  $2^{x+y}=10$ ,  $2^{y+z}=20$  and  $2^{z+x}=30$  where x, y and z are any three real numbers. The value of  $2^x$  is **75.** 
  - $(1) \frac{3}{2}$
- (2)  $\sqrt{15}$
- (3)  $\frac{\sqrt{6}}{2}$
- (4) 15
- In the given figure ABC is a triangle in which CDEFG is a pentagon. Triangles ADE and BFG are 76. equilateral triangles each with side 2 cm and EF=2 cm. Find the area of the pentagon.



- (1)  $8\sqrt{3} \text{ cm}^2$
- (2)  $7\sqrt{3} \text{ cm}^2$
- (3)  $15\sqrt{3} \text{ cm}^2$
- $(4) 11.28 \text{ cm}^2$
- 77. In the figure shown below, m∠A is 75°, m∠D is 25°, and m∠EFC is 170°. Find the degree measure of  $\angle EBC$ .



- $(1)\ 35^{\circ}$
- $(2) 70^{\circ}$
- $(3)~85^{\circ}$
- (4) 95°
- 78. If 2x 1 is an odd number and 3y-1 is an even number, which of the following is/are necessarily even?
- (I)  $x^2 2y + 2$  (II)  $y^2 2x + 3$  (III)  $4x^2 y 1$
- (1) I only

(2) II only

(3) I and II

- (4) II and III
- p% of the students of a class passed the exam. g% of the passed students are girls and b% of the fail **79.** students are boys. The percentage of passed boys over the failed girls is

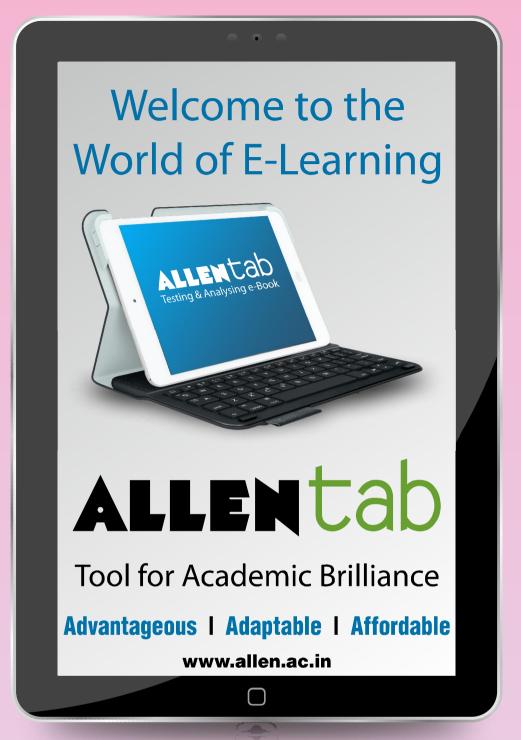
  - (1)  $\left(\frac{bg}{p} \times 100\right)$  (2)  $\frac{100(100-g).p}{(100-p)(100-b)}$  (3)  $\frac{(100-g)(100-b)}{(100-p)}$  (4) None of these
- 80. A solution of 165 litres contains 80% of acid and the rest water. How much water must be added to the above solution such that the resulting mixture contains 25% water?
  - (1) 11 litres
- (2) 8 litres
- (3) 9 litres
- (4) 10 litres



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# ANSWER KEY: CLASS - 9th (IX) (Held on: 12-10-2014)

Q. No.	Ans.	
1	1	
2	4	
3	2	
4	4	
5	2	
6	1	
7	1	
8	2	
9	4	
10	4	
11	4	
12	3	
13	1	
14	3	
15	1	
16	2,4	
17	2	
18	1	
19	1	
20	3	

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Q. No.	Ans.
21	3
22	4
23	2
24	2
25	4
26	2
27	1
28	1
29	4
30	4
31	3
32	1
33	1
34	1
35	3
36	1
37	3
38	2
39	2
40	1

Q. No.	Ans.
41	1
42	1
43	1
44	3
45	2
46	2
47	1
48	1
49	4
50	3
51	1
52	2
53	3
54	1
55	1
56	2
57	4
58	1
59	1
60	2

Q. No.	Ans.
61	2
62	3
63	1
64	2
65	3
66	3
67	1
68	3
69	4
70	1
71	3
72	4
73	2
74	2
75	2
76	2
77	2
78	4
79	2
80	1

