

Class - VIII

ENTRANCE TEST CUM SCHOLARSHIP (SAMPLE PAPER-3)

[Time: 3 Hours]

[Max Marks: 450]

A.General:

- 1. This booklet is a Question Paper containing 150 questions.
- 2.Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.
- 3. The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.
- 4.DO NOT TAMPER WITH THE OMR OR THE BOOKLET.
- 5. Please fill your roll number correctly in the OMR sheet (answer sheet).
- 6.Both Question Paper and OMR Ans wer Sheet will be submitted after completion of this examination.
- B.Question Paper Format and marking scheme:
 - 1. The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Biology, Part V: Mathematics).
 - 2.Each Question carries +3 marks for correct answer and -1 mark for incorrect answer.

MAT

	Dire from	ections (Q. 1–9): the given alternat	ln ea tives	ach of the following	que	stions, select the rela	ted	word/letters/number
1.	23 :	13 : : 54 : ?						
	(a)	40	(b)	43	(c)	44	(d)	39
2.	Seis	mometer : Earthq	uake	es : : Thermometer :	?			
	(a)	Mercury	(b)	Temperature	(c)	Wind	(d)	Doctor
3.	Play	: Actor : : Concer	-t:?					
	(a)	Percussion	(b)	Symphony	(c)	Musician	(d)	Piano
4.	DLII	P:FNKR::JRO\	1:?					
	(a)	MURY	(b)	LTQX	(c)	NVSZ	(d)	KSPW
5.	YAV	VC : UESG : : QIC)K :	?				
	(a)	ММКО	(b)	ROME	(c)	MINC	(d)	MIKE
6.	17:	24 : : 153 : ?						
	(a)	213	(b)	216	(c)	118	(d)	198
7	M	. <u>N</u> <u>O</u> .2						
7.	AC	AD						
	(-)	Р	(1-)	Q	(-)	Р	(-1)	R
	(a)	ĀF	(b)	AB	(C)	ĀC	(a)	AD
8.	ABE	: 8 :: KLO : ?						
	(a)	37	(b)	39	(c)	38	(d)	36
9.	ADE	BC : EHFG :: ILJK	: ?					
	(a)	MOPN	(b)	MPNO	(c)	ORPQ	(d)	MPON
	Dire	ections (Q. 10–14)	: In	each of the following	que	estions, select the one	whi	ich is different from the
10			(h)	C	(c)	0	(H)	1
10.	(a)	24	(D)	2	(c)	3	(u)	1
11.	(a)	30	(D)	90	(c)	74 7	(u)	00
12. 12	(a)		(D)		(c)		(u)	90, 9 CUM
13.	(a)	LINOR	(D)	IRFJ	(c)		(u) (d)	GIJIVI
14. 1E	(a)	Heal	(U)		(0)	BUID	(u)	
15.		Indiao	en re כ	sponses would be a	nue Line	Annyiui order of th		Plue
	ו. ה	Croop	۷. ۲	Reu Vollow	ა. 7	Orange	4.	DIUE
	ງ. (ຄ)		0. (h)		1. (a)		(_ମ)	2 1 4 5 7 7 2
	121	J. I. 4. J. Z. D. /	(U)	J. I. 4. J. 0. Z. /	(C)	1, 0, 0, <i>1</i> , 3, 4, 2	(U)	J, I, 4, J, 0, 1, Z

16.	Arra	inge the following	y words as per order in t	the English dictionary:	
	1.	Caricature	2. Cardinal	3. Carnivore	4. Cartoon
	5.	Category			
	(a)	2, 1, 3, 4, 5	(b) 4, 5, 1, 3, 2	(c) 1, 2, 3, 4, 5	(d) 2, 1, 3, 5, 4
17.	Whi	ch one set of lette	rs when sequentially pla	aced at the gaps in the	given letter series shall
	com	plete it ?			
	R_S	_ PM_KSB_MRK	_		
	(a)	KRKSP	(b) KBRPS	(c) RKSPM	(d) BPSMP
18.	In th	e following series	, how many HIG occurs	in such a way that 'I' is	in the middle and 'H' and
	'G' a	are adjacent to it o	on both sides?		
	GGF	IIHIIGGJKLMGIF	lIG		
	(a) 3		(b) 2	(c) 5	(d) 1
	Dire	ections (Q. 19–22)	: In each of the following	g questions, a series is g	iven with one term missing.
	Choo	ose the correct alter	mative from the given on	es that will complete the	series.
19.	2, 9,	28, ?, 126			
	(a)	65	(b) 62	(c) 64	(d) 67
20.	ELF	a, glha, ilja, ?,	MLNA		
	(a)	ILMA	(b) KLLA	(c) QLPA	(d) KLMA
21.	3, 8,	18, 35, ?, 98			
	(a)	61	(b) 71	(c) 41	(d) 51
22.	975,	864, 753, 642,?			
	(a)	431	(b) 314	(c) 531	(d) 532
23.	L, N is th	l, N and O are bro e darkest of all ?	others. L is darker than	O, N is the fairest of al	I. M is fairer than O. Who
	(a)	Ν	(b) O	(c) L	(d) M
24.	Anja to A	ili says, "He is the njali?	e only son of the father o	of my sister's brother."	How is that person related
	(a)	Uncle	(b) Cousin	(c) Brother	(d) Father
25.	Fron word	n the given alterna d "FUNDAMENT	ative words, select the v AL".	vord which can be form	ned using the letters of the
	(a)	TAME	(b) FUNDS	(c) TENT	(d) NOSE
26.	Fron the v	n the given altern word "THERMOE	ative words, select the v DYNAMICS".	word which cannot be f	formed using the letters of
	(a)	MATHEMATICS	(b) MOTHER	(c) MODERN	(d) DYNAMO
27.	Joan Joan	's age is 42 years a 's age?	and Kelvin's age is 26 ye	ars. How many years a	go was Kelvin's age half of
	(a)	6 years	(b) 4 years	(c) 10 years	(d) 8 years

- 28. In a certain code, 'RATIONAL' is written as 'RTANIOLA'. How would 'TRIBAL' be written in the same code ?
 - (a) TIRLBA (b) TIRABL (c) TRIALB (d) TIRALB
- 29. If 'INDUS' is coded as '03865' and 'TENNIS' is coded as '243305', then what will be the code for 'STUDENT' ?
 - (a) 5628342 (b) 5648324 (c) 5268432 (d) 5642832
- 30. Given below are capital letters in the first line and symbols in the second line. Symbols and letters are codes for each other. Choose the correct code for the word "HEIGHT".

А	С	E	G	Η	Ι	0	Ν	Р	R	Т	S	В	D	М
+		÷	×	=	()	[]	≠		#		>	<

(a) = \times (\div = | | (b) = \times (\times = | | (c) = \div (\times | | = (d) = \div (\times = | |

Directions (31-33) : In the following questions, select the answer figure from the given alternatives which is closest to the unfolded paper.

31. Problem Figures



(c)		
	010	
	<u>ono</u>	

(d)	20	õ	
	Fo	05	

32. Problem Figures



33. Problem Figures









(c)

5000

DAAC

Directions (34-35) : In the following questions, choose the correct water image from amongst the four alternatives a, b, c and d given along with it.

34. Problem Figure

35.



Directions (36-37) : In the following questions, choose the correct mirror image from amongst the four alternatives a, b, c and d given along with it.

36. Problem Figure







(b)





(d)

37. Problem Figure





(C)

Directions (38-40) : In the following questions, find out the odd one out figure from the given alternatives .



Directions (41-43): Find the correct alternative in the answer figures, the relation between the problem figure (X) and answer (a, b, c, d) must be same.

41. Problem Figure



Directions (44-46) : In the following question, select the answer figure from given alternatives which is continuous with the problem figure.

44. Problem Figures



Directions (47-49): In the following questions, choose the correct alternative from amongst the four a, b, c and d which complete the figure matrix?

47. Problem Figure



48. Problem Figure











49. Problem Figure



(a)







50. Count the number of rectangles in the figure given below.



(a) 21

(b) 18

(c) 19

(d) 20

51. Find the number of rectangles contain in the figure given below.



Directions (52-54) : In the following questions, which figures are similar to the respective problem figures?

52. Problem Figure



55. If the bottom face is marked as number 4, which number will be on the top among the following two figures?





Directions (56-58) : In the following questions, figure 'A' is related to 'B' same 'C' is related to 'D', find out the correct alternative from amongst the four.

Problem Figures 56.

58.



Count the number of cubes in the given figure. 59.





60. How many triangles are there in the following figure?

	(a) 7	(b) 8	(c) 9	(d) 10
		PH	YSICS	
61.	1 Newton is equal	to:		
	(a) 10 ⁷ dyne	(b) 10 ⁴ dyne	(c) 10 ⁵ dyne	(d) 10 ¹⁰ dyne
62.	Which of the follow	ving has more inertia?		
	(a) A pin	0	(b) A pen	
	(c) Your physics be	ook	(d) Your loaded scho	ol bag
63.	A force of magnitud direction of force.	de 40 N acts on a body, t The mass of body is:	hen body acquires an acc	celeration of 2m/s ² along the
	(a) 40 kg	(b) 20 kg	(c) 10 kg	(d) 8 kg
64.	The momentum of	a body of given mass is	s proportional to its:	
	(a) volume	(b) shape	(c) speed	(d) colour
65.	Friction force is :			
	(a) Contact force	(b) Normal force	(c) Muscular force	(d) Gravitational force
66.	Frictional force alw	ays act:		
	(a) normally upwa	rd to contact surface	(b) normally downw	ard to contact surface
	(c) tangential to th	e contact surface	(d) none of these	
67.	Frictional force car	not be measured in:		
	(a) kg wt.	(b) newton	(c) dyne	(d) kg ms ⁻¹
68.	Kinetic friction alw	ays acts when:		
	(a) body is in moti	on with respect to conta	act surface.	
	(b) body is in rest	with respect to contact s	surface.	
	(c) body either in I	rest or motion with resp	ect to contact surface.	
	(d) none of these.			
69.	Frictional force is c	lirectly proportional to t	he:	
	(a) external force		(b) normal force	
	(c) gravitational for	rce	(d) acceleration due	to gravity

70.	A force of 160 N is di on this surface is :	istributed uniformly or	n one surface of a cube	of edge 4 cm. The pressure
	(a) 3500 Pa	(b) 100000 Pa	(c) 4500 Pa	(d) 5500 Pa
71.	Sound waves in air a	are waves.		
	(a) longitudinal	(b) transverse	(c) radio	(d) electro-magnetic
72.	The frequency of sou	nd waves can be expre	ssed in:	
	(a) Hertz (Hz)	(b) Cycles / second	(C) S ⁻¹	(d) All of these
73.	The frequency of a w	ave is 40 Hz and its wa	avelength is 8m. The ve	locity of the wave is:
	(a) 220 ms ⁻¹	(b) 320 ms ⁻¹	(c) 300 ms ⁻¹	(d) 120 ms ⁻¹
74.	If the mass of a pend	ulum is doubled, the t	ime period:	
	(a) becomes double	(b) becomes half	(c) becomes 4 times	(d) remains the same
75.	The persistence of he	aring for human being	s is not more than:	
	(a) 1 sec	(b) 1/5 sec	(c) 1/10 sec	(d) 1/2 sec
76.	If wind blows in a dir	rection opposite to the s	sound propagation, the	n the velocity of the sound:
	(a) increases	(b) decreases	(c) remains constant	(d) cannot be determined
77.	A man standing betw 1.2 sec. The distance	een two hills makes sou between two hills is: (v	und loudly and receives v = 330 m/s)	two echoes after 1 sec and
	(a) 263 m	(b) 363 m	(c) 430 m	(d) 230 m
78.	An object moving at	a speed greater than th	at of sound is said to b	e moving at:
	(a) Ultrasonic speed	(b) Sonic speed	(c) Infrasonic speed	(d) Supersonic speed
79.	Light is focused on a about an axis passing rotated?	wall by a plane mirror. through the plane of the	A boy rotates the mirro ne mirror. By what angle	r by an angle 30° clockwise e will the reflected beam be
	(a) Remains fixed		(b) Rotates by 15° clo	ockwise
	(c) Rotates by 60° and	ticlockwise	(d) Rotates by 60° clo	ockwise
80.	A ray of light after reflected	ection from a plane mirr I ray.	or, suffers a deviation of	60°. Find the angle between
	(a) 130°	(b) 120°	(c) 145°	(d) 160°
81.	The plane mirror form	ms the:		
	(a) Virtual and lateral	lly inverted image	(b) Virtual and latera	lly erect image
	(c) Real and laterally	inverted image	(d) Real and laterally	erect image
82.	Cornea is a transpare	nt spherical structure v	vhich:	
	(a) reflects light	(b) scatters light	(c) refracts light	(d) disperse light
83.	The change in focal le	ength of an eye lens is	caused by the action of	the:
	(a) Pupil	(b) Retina	(c) Ciliary muscles	(d) Iris

84.	When a ray of light	is incident normally, th	e angle of incidence is:	
	(a) 90°	(b) 0°	(c) 45°	(d) None
85.	A convex lens is also	o called a :		
	(a) Diverging lens		(b) Converging lens	
	(c) Cylindrical lens		(d) Both converging a	ind diverging lens
		CHEN	/ISTRY	
86.	Metal which does no	ot react with dil. HCl is :	:	
	(a) Mg	(b) Cu	(c) Na	(d) Fe
87.	Non-metal + dil. aci	$d \longrightarrow$		
	(a) reacts slowly	(b) reacts violently	(c) reacts moderately	(d) no reaction
88.	The minimum temp	erature at which a subst	ance catches fire is called	:
	(a) Boiling tempera	iture	(b) Ignition temperate	ure
	(c) Melting temper	ature	(d) None of these	
89.	In foam type fire ext	tinguisher is resp	oonsible to put off fire.	
	(a) H ₂ O	(b) $CO_2 + H_2O$	(c) CO ₂	(d) CO
90.	The tip of the lead o	f pencil is made of :		
	(a) lead	(b) graphite	(c) zinc	(d) charcoal
91.	Aqua regia is a mixt	ure of :		
	(a) three parts of co	oncentrated nitric acid a	nd one part of concentrat	ed hydrochloric acid.
	(b) three parts of co	oncentrated hydrochlorid	c acid and one part of co	ncentrated nitric acid.
	(c) three parts of di	lute hydrochloric acid a	nd one part of dilute nitr	ic acid.
	(d) three parts of di	lute nitric acid and one	part of dilute hydrochlor	ic acid.
92.	Petroleum is commo	only called as :		
	(a) Black gold	(b) Yellow gold	(c) Green gold	(d) Bluegold
93.	Air is a natural resounatural resounatural resounce. Wi	irce and cannot be exhau hich of the following is a	sted by human activities. another inexhaustible nat	It is known as inexhaustible ural resource?
	(a) Coal	(b) Petroleum	(c) Sunlight	(d) Minerals
94.	Hg + dil. NaOH ——	>		
	(a) react vigorously	(b) no reaction	(c) reacts moderately	(d) reacts slowly
95.	is heating the	e concentrated ore in abs	sence of air.	
	(a) Roasting	(b) Calcination	(c) Reduction	(d) Refining
96.	In LPG cylinder, the	gas is liquefied by :		
	(a) Increasing volu	me	(b) Applying pressure	
	(c) Increasing temp	perature	(d) Decreasing pressu	re
97.	Cinnabar is an ore o	f :		
	(a) Pb	(b) Zn	(c) Hg	(d) Cu

- 98. Which of the following is a noble gas?
 - (a) Nitrogen (b) Oxygen (c) Argon

(d) Carbon dioxide

99. What are X, Y and Z?



100. Which of the following reacts with cold water vigorously?

(a)	Carbon	(b) Sodium	(c) Magnesium	(d) Sulphur
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101. When you introduce a glass plate into the luminous zone of a candle flame then, which of the following is correct regarding your observation?



- (a) Deposition of burnt CO_2 particles present in the air around the flame.
- (b) Deposition of unburnt carbon particles in the luminous zone of the flame.
- (c) Deposition of molten wax.
- (d) All of these.
- 102. Naphthalene balls are obtained from:
 - (a) Carbon (b) Coke (c) Coal tar (d) Coal gas
- 103. CNG is stored under :
 - (a) Power generation (b) Electric Generators (c) Solvent (d) None of these

104.	The plastic in whic	h monomers are arrange	d in a straight linear	chain is:
	(a) Bakelite	(b) Melamine	(c) Formica	(d) Polythene
105.	Which of the follow	ving is not a combustible	e substance?	
	(a) Magnesium	(b) Charcoal	(c) Petrol	(d) Glass
106.	Which of the follow	ving metals can be easily	y cut with knife?	
	(a) Na	(b) K	(c) Li	(d) All of these
107.	Whose reactivity is	highest among the follo	wing metals?	
	(a) Copper	(b) Potassium	(c) Iron	(d) Zinc
108.	Different steps invo	olved in the manufacture	e of sulphuric acid in	contact process are given below.
	Arrange them in the	ne correct sequence.		
	(A) Formation of c	leum	(B) Oxidation of	SO ₂
	(C) Hydrolysis of a	bleum	(D) Combustion	of sulphur
	(a) DACB		(b) A D B C	
	(c) DBAC		(d) A D C B	
109.	Sulphur, on heating	g follows which of the fo	llowing sequence?	
	(a) solid \longrightarrow this	ck viscous liquid \longrightarrow t	hin liquid \longrightarrow gas	
	(b) solid \longrightarrow sen	ni solid \longrightarrow liquid —	→ gas	
	(c) solid \longrightarrow this	n liquid \longrightarrow thick visc	ous \longrightarrow thin liquid	\longrightarrow gas
	(d) solid \longrightarrow power	wdery solid \longrightarrow thick v	viscous liquid \longrightarrow g	jas
110.	Which of the follow	ving is used for making	permanent magnets	?
	(a) Duralumin	(b) Magnalium	(c) Bronze	(d) Alnico
		BIC	DLOGY	

111. During a cell division :

- (a) Nucleus divides first and then cytoplasm.
- (b) Cytoplasm divides first and then nucleus.
- (c) No such relationship.
- (d) Nucleus and cytoplasm divide together.
- 112. Which of the following combination is present in plant cell but not in animal cell?
 - (a) Cell Wall & Plastid (b) Plastid and Nucleus
 - (c) Cell wall and Cell membrane (d) Cell Membrane and Cytoplasm
- 113. Which of the following characteristics is true for a virus?
 - I. It has a nucleus.
 - II. It reproduces only in living cells.
 - III. It contains either DNA or RNA.
 - (a) I only (b) I and III only (c) II and III only (d) I, II and III

114. Which of the following is NOT true for chemical fertilizers?

- (a) They are nutrient specific.
- (b) They are readily soluble in water.
- (c) They provide organic matter (humus) to the soil.
- (d) Overuse of chemical fertilisers pollute the soil.
- 115. The most common weed which grows along with almost every crop is :
 - (a) Chenopodium (b) Convolvulus (c) Amaranthus (d) Xanthium

116. A common preservative used in jam and pickles is:

- (a) Sodium benzoate (b) Nitric acid
- (c) Sodium chloride (d) Copper sulphate
- 117. A membrane which bounds the chief vacuole of plant cell is called as:
 - (a) Tonoplast (b) Leucoplast (c) Mycoplast (d) Nucleoplast
- 118. The figure given below shows a part of nitogen cycle.



122. A man is 5 years older than his wife and the wife is now thrice as old as their daughter, who is 10 years old. How old was the man when his daughter was born?

(a) 20 years	(b) 23 years	(c) 25 years	(d) 30 years
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- 123. A fraction is such that if the numerator is multiplied by 3 and the denominator is reduced by 3, we get 18/11, but if the numerator is increased by 8 and the denominator is doubled, we get 2/5. Then the fraction is:
 - (a) $\frac{16}{25}$ (b) $\frac{12}{25}$ (c) $\frac{18}{25}$ (d) $\frac{22}{25}$
- 124. The sum of the angles $\angle A + \angle B + \angle C + \angle D + \angle E$ in the given figure is:



133. If the radius of a circle is $\frac{7}{\sqrt{\pi}}$ cm, then the area of the circle is :

(a) 154 cm² (b)
$$\frac{49}{\pi}$$
 cm² (c) 22 cm² (d) 49 cm²

134. If the area of a circle is A, radius of the circle is r and circumference of it is C, then:

(a)
$$rC = 2A$$
 (b) $\frac{C}{A} = \frac{r}{2}$ (c) $AC = \frac{r^2}{4}$ (d) $\frac{A}{r} = C$

135. The area of the largest triangle that can be inscribed in a semicircle whose radius is r cm is :

(a)
$$2r \text{ cm}^2$$
 (b) $r^2 \text{ cm}^2$ (c) $2r^2 \text{ cm}^2$ (d) $\frac{r}{2}\text{ cm}^2$

136. The area of three adjacent faces of a cuboid are x, y, z if the volume of the cuboid is v, then v^2 is equal to :

(a) xyz (b) xy + yz + zx (c) $(xyz)^2$ (d) \sqrt{xyz}

137. The radius of the cylinder whose lateral surface area is 704 cm² and height 8 cm is : $\left(Take \pi = \frac{22}{7} \right)$

(a) 6 cm (b) 4 cm (c) 8 cm (d) 14 cm

138. A diagonal of a rectangle is inclined to one side of it at 25°. The acute angle between the diagonals is:

(a) 25° (b) 40° (c) 50° (d) 55° 139. ABCD is a rhombus. If $\angle ACB = 40^{\circ}$, then $\angle ADB$ is : (a) 40° (b) 45° (c) 50° (d) 60° 140. $\sqrt{12 + \sqrt{12 + \sqrt{12 + \dots}}} = ?$

(a) 3 (b) 4 (c) 6 (d) greater than 6 141. The value of 1 + 3 + 5 + 7 + 9 + + 25 is :

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(a) 196 (b) 625 (c) 225 (d) 169
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142. Simplified form of $\left\{\sqrt[4]{\left(\frac{1}{x}\right)^{-12}}\right\}^{-2/3}$ is :

(a)
$$x^{-2}$$
 (b) $\frac{1}{x^{-2}}$ (c) $\frac{1}{x}$ (d) x^{-1}

143. A sum of money doubles itself in 3 years at CI, when the interest is compounded annually. In how many years will it amount to 16 times of itself?

(a) 6 years (b) 8 yea	rs (c) 12 years	(d) 16 years
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144. In the figure given below, PTU is a straight line.

What is the value of x?
(a) 100° (b) 110° (c) 120° (d) 90°
145.
$$\frac{2}{3}$$
rd of a number when multiplied by $\frac{3}{4}$ th of the same number make 338. The number is:
(a) 18 (b) 24 (c) 36 (d) 26
146. The square of a natural number subtracted from its cube is 48. The number is :
(a) 6 (b) 5 (c) 4 (d) 8
147. A man can row at 8 kmph in still water. If the river is running at 2 kmph, it takes him 48 minutes
to row to a place and back. How far is the place?
(a) 1 km (b) 2 km (c) 3 km (d) 4 km
148. What percent decrease in salaries would exactly cancel out the 20% increase?
(a) $16\frac{2}{3}\%$ (b) 18% (c) 20% (d) $33\frac{1}{3}\%$
149. What is the ratio whose terms differ by 40 and the measure of which is $\frac{2}{7}$?
(a) $16 : 56$ (b) $14 : 56$ (c) $15 : 56$ (d) $16 : 72$
150. If M is a perfect square natural number, then the next immediate perfect square natural number
is :
(a) M + 1 (b) M + $2\sqrt{M} + 1$ (c) M² + 2M (d) M² + 1

ROUGH WORK