INTEL BRIDGE COURSE

SCHOLARSHIP TEST



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Full Marks: (100×1) = 100

General Science

- 1. Dimension of which are same?
 - a) Work and moment of force
 - b) Torque and force
 - c) Velocity and velocity gradient
 - d) All

2. What is the maximum magnitude of $(\vec{A} - \vec{B})$? a) A + B b) A - B c) $\sqrt{A^2 + B^2}$ d) $\sqrt{A^2 - B^2}$

- 3. The slope of velocity-time graph gives:
 a) Acceleration
 b) Displacement
 c) Uniform speed
 d) Stationary object
- 4. A person on a moving train throws upwards a coin, and if it falls behind him, then train is:
 - a) Acceleratingb) Deceleratingc) Moving with constant velocityd) Any of the above
- 5. If the external force applied is zero, then which of the following is conserved?

a) Linear momentum	b) Angular momentum
c) Torque	d) Time period

6. A 5kg stone falls from height of 100m and penetrates 2m in a layer of sand. The force applied by ground is:

a) 2500 N	b) 1500 N
c) 1000 N	d) 3000 N

7. A body 2 kg is accelerated from zero to 72 km/hr. The work done on the body is:

a) 400 J	b) 200 J
c) 250 J	d) 100 J
At what height from	n earth, g becomes g/2?
a) R/2	b) 0.414R

8.

	c) 0.7R	d) R
9.	What fraction of wooden block of density 0.8g/cc will be outside the sea water of density 1.2g/cc?	
	a) 2/3	b) 1/2
	c) 2/5	d) 1/3
10.	40° C is equal to:	
	a) 102 ⁰ F	b) 104 ⁰ F
	c) 100 ⁰ F	d) 106 ⁰ F
11.	Amount of heat required to 20° C to:	change the mass of water 2kg from 40° C
	a) 168 KI	b) 120 KI
	a) 142 KI	d) 168 I
	C) 142 KJ	u) 108 J
12.	Which can produce maximum	n pitch sound?
	a) Lion	b) Man
	c) Women	d) Mosquito
13.	Power of a plane mirror in Di	optre is:
	a) +1	b) -1
	c) 0	d) Infinity
14.	In dispersion of light throu deviated least?	gh prism, which colour of light is
	a) Red	b) Violet
	c) Yellow	d) All equal
15.	6 cells of emf 6V was connected in parallel combination. Wh was equivalent emf?	
	a) 6V	b) 4V
	c) 2V	d) 8V
16.	Two nuclei which are not ide nucleons represent.	entical but have the same number of
	a) Isotones	b) Isobars
	c) Isotopes	d) None
	· ·	,

17.	The ion that is isoelectronic with CO is:	
	a) CN ⁻	b) O_2^+
	c) O_2^-	d) N_2^+
18.	In C + H ₂ O \rightarrow CO + H ₂ , H ₂ O	acts as:
	a) Oxidising agent	b) reducing agent
	c) both	d) none
19.	What is the pressure of $65g$ litres at $27^{0}C$?	of O_2 enclosed in a cylinder of 20
	a) 2 atm	b) 1 atm
	c) 2.5 atm	d) 3 atm
20.	2 gm of O_2 at NTP has volume:	
	a) 1.4 litre	b) 2.8 litre
	c) 8 litre	d) 11.2 litre
21.	Milk is:	
	a) Fact dispersed in milk	b) Fat dispersed in water
	c) Water dispersed in fat	d) Water dispersed in oil
22.	Concentration of hydrogen io	n in water is:
	a) 8	b) 10 ⁻⁷
	c) 7	d) 1
23.	. When one ampere current flows for 1 second through a conduct this quantity of electricity is called:	
	a) Faraday	b) Coulomb
	c) EMF	d) Ohm
24.	Vapour density of a gas is 22.	Its molecular weight will be:
	a) 33	b) 22
	c) 44	d) 11
25.	Modern atomic weight scale i	s based on:
	a) H-1	b) C-12

c) C-14	d) O-16
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- 26. Muriatic acid is: a) Conc. H_2SO_4 b) Conc. HCl c) Mg(OH)_2 d) H_2S
- 27. Sodium is kept (stored) under:
 a) Water
 b) Kerosene
 c) Alcohol
 d) Cotton
- 28. Rate of diffusion of a gas is: a) Directly proportional to its density b) Directly proportional to its molecular mass c) Directly proportional to square of its molecular mass d) Inversely proportional to the square root of its molecular mass 29. Bakelite is made up of: a) Toulene and formalin b) Alcohol and formalin c) Carbolic acid and alcohol d) Carbolic acid and formalin When alkanes such as ethane, methane are burnt the product is: 30. b) CO₂ a) NO₂ c) SO_2 d) P_2O_5 Centromere is a part of: 31. a) Chromosome b) Centriole d) Ribosome c) Lysosome 32. The site for protein synthesis is: a) Golgi body b) Ribosome c) ER d) Mitochondria 33. Chiasma formation occurs during: a) Leplotene b) Diplotene c) Pachytene d) Zygotene Crossing over occurs during: 34. a) Fertilization b) Mitosis 5

	c) Meiosis	d) Amitosis
35.	35. Which of the following is not an autotroph?	
	a) Lyano bacteria	b) Fern
	c) Mushroom	d) Pinus
36.	Phycology is the study of:	
	a) Algae	b) Fungi
	c) Bacteria	d) All the above
37.	Plants lacking seed and vas embryo are:	cular system but forming spores and
	a) Bryophytes	b) Pleridophytes
	c) Thallophytes	d) Gymnosperm
38	8 Frord is a term given to leaves of:	
20.	a) A moss	b) A fern
	c) A coniter	d) Angiosperm
		<i>a)</i> - <u>mg</u> roop er m
39.	Which is most stable ecosyst	tem?
	a) Mountain	b) Desert
	c) Forest	d) Ocean
40.	0. Ozone depleting power is maximum for:	
	a) W rays	b) CFCs
	c) NX ₃	d) CO ₂
41.	Charles Darwin's theory of evolution is based on	
	a) Environment	b) Mutation
	c) Chromosome pairing	d) Natural selection
12	Deremonium moure hu	
42.	a) Cilia	b) Flagella
	a) Cilla	d) None
43	Radial symmetry is found in	
чЭ.	a) Porifera	b) Coelenterate
	u) - ornoru	
	(6)

	c) Helnianths	d) Annelid
44.	Tapeworms obtain their mutation from the host by:	
	a) Sucking	b) Scraping
	c) Absorption through body	d) None
45.	What of the following belongs to phylum Annelida?	
	a) Neries	b) Octopus
	c) Crap	d) Filaria
46.	Which of the following un animal	der includes number of species in kingdom?
	a) Vertebrata	b) Insecta
	c) Mollusca	d) Echinodermata
47.	In which of the following of blood?	loes heart pump only deoxygenated
	a) Fish	b) Amphibians
	c) Reptiles	d) Birds
48.	How many numbers of crabeings?	anial nerves are present in human
	a) 12	b) 10
	c) 10 pairs	d) 12 pairs
49.	Ophiology is the study of:	
	a) Snake	b) Pisces
	c) Lizard	d) Frog
50.	Vit B ₁₂ is absorbed from:	
	a) Stomach	b) Duodenum
	c) Illeum	d) Large intestine
Mat	hematics	

51. If A = {1, 2, 3}, B = {3, 4, 5} then A Δ B =

a) {1, 4, 5}	b) {1, 2, 4, 5}
c) {1, 2}	d) {4, 5}

52. If n(U) = 125, n(A) = 80, n(B) = 65, what is the greatest value of n(A ∪ B)?
a) 125 b) 80
c) 100 d) 110

53.	A function f: $A \rightarrow B$ is onto if:	
	a) f(A) is equal to B	b) f(A) is proper subset of B
	c) A is equal to B	d) A is subset of B

54. In how many ways can 6 books be distributed among 5 students? a) 6^5 b) 6×5 c) 6! 5! d) 5^6

55. If $|\vec{a}| = 3$, $|\vec{b}| = 4$ and $|\vec{a} + \vec{b}| = 5$ then $|\vec{a} - \vec{b}| = ----$ a) 6 b) 5

- c) 4 d) 3
- 56. If f(x 1) = x + 2 then $f(x^2) = ---$ a) $x^2 + 3$ b) x - 3c) $x^2 + x + 1$ d) $x^2 - 5$
- 57. If $A^2 A + I = 0$ then $A^{-1} = ---$ a) $\frac{I}{A^2}$ b) A + Ic) I - A d) A - I

58. If p^{th} term of A.P. is q and q^{th} term is p, then $(p + q)^{th}$ term is: a) pq b) p^2q c) 0 d) 1

59. A dealer gains a selling price of 4 watches by selling 20 watches. What is the profit percentage?
a) 15%
b) 20%
c) 30%
d) 25%

60.	When n is divided by 7, the remainder is 4. What is the remainder when 2n is divided by 7?	
	a) 0	b) 2
	c) 1	d) 3
61.	Function $f(x) = \sin x \times \cos x$ is:	
	a) Odd function	b) Even function
	c) Both	d) None
62.	What is the measure of the angle formed by the minute and hou hands of a clock at 1.50°	
	a) 90°	b) 105 ⁰
	c) 115 ⁰	d) 120°
63.	If $7x - 4y$: $3x + y = 5$: 13, the	e value of x : y is:
	a) 3:2	b) 3:4
	c) 2:3	d) 4:3
64.	One root of the equation $3x^2$ then $p =$	+ px + 3 = 0 is square of the other,
	a) $1/3$	b) 1
	()	d) $2/3$
	() 5	u) 2/5
65.	Which of the following is not	n-invertible matrix?
	a) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$	b) $\begin{pmatrix} 5 & 3 \\ 1 & 7 \end{pmatrix}$
	c) $\begin{pmatrix} 2 & -4 \\ 3 & -5 \end{pmatrix}$	d) $\begin{pmatrix} 2 & 3 \\ 4 & 6 \end{pmatrix}$
66.	The length of the portion into $3x + 4y = 1$ is:	ercepted between the axes by the line
	a) 7 units	b) 3/2 units
	c) 6 units	d) 5 units

67. The value of k such that kx² - 8xy + 8y² = 0 represents two coincident straight lines passing through the origin is:
a) k = 2
b) k = 4

c) k = -3 d) k =
$$\frac{1}{2}$$

68. The circle $x^2 + y^2 - 3x - 4y + 2 = 0$ cuts the x-axis at the point. a) (3, 0) b) $(\frac{1}{2}, 0), (-3, 0)$ c) (1, 0), (4, 0) d) (2, 0), (1, 0)

69. The value of $\sin^{-1}x + \cos^{-1}x = ---$ a) π b) $\frac{\pi}{2}$ c) 1 d) 0

70. If the price of petrol increases by 25% and Ram intends to spend only 15% more on petrol, by how much % should he reduce the quantity of petrol that he buys?

a) 5%	b) 8%
c) 9%	d) 10%

71. An area diagram is:a) Histogramc) Ogiveb) Frequency polygond) None of these

- 72. The value of: $2^{23} 2^{22} 2^{21} 2^{20}$ is a) 2^{21} b) $2^{\left(\frac{23}{912}\right)}$ c) 2^{20} d) 2^{22}
- A dishonest dealer professing to sell his goods at cost price, uses 900 gm weight for 1 kg. What gain % is:
 - a) 11% b) $11\frac{1}{2}$ % c) $11\frac{1}{9}$ % d) 12%

74. If £1 = Rs. 140, £0.5 = 3.52 marks, 3.91 marks = \$1 and \$1 = 4.8 Francs, how many Francs are equal to Rs. 26,000?
a) 1505 b) 1405

c) 1605	d) 1600
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- 75. In what time a sum of money trebles itself at 5% p.a. at a simple interest?
 - a) 20 yearsb) 30 yearsc) 40 yearsd) 10 years

76. If the circumference of a circle I is equal to the diameter of the circle II, the ratio of the area of circle II to area of circle I is:

a) $\frac{1}{\pi^2}$ b) $\sqrt{\pi}$ c) π d) π^2

77. What is the probability that a leap year has 53 Sunday?
a) 1/4
b) 1/3
c) 1/7
d) 2/7

- 78. If $-7 \le x \le 7$ and $0 \le y \le 12$, what is the greatest possible value of y x? a) -19 b) 5 c) 19 d) 17
- 79. If 10a + 10b = 35, what is the average of a and b?
 a) 3.5
 b) 7
 c) 1.75
 d) 10
- 80. In the figure below, a:b = 3:5 and c:b = 2:1 what is the measure of the largest angle?

11



English

81. She is of the two sisters.

a) prettier	b) the prettier
c) pretty	d) the prettiest

82.	the finish first, the runner gave up. a) Having failed to reach			
	b) Having failed reaching			
	c) He failed to reach			
	d) That he failed rea	ching		
83.	Let this be a secret between you and			
	a) I	b) me		
	c) myself	d) mine		
84.	I am disgusted and			
	a) you too are	b) are you too		
	c) you are so	d) so are you		
85.	You've done well,?			
	a) don't you	b) has it you		
	c) haven't you	d) do you		
86.	his repeated failure, he is still optimistic.			
	a) In spite	b) Despite		
	c) Although	d) Even though		
87.	John is used to to FM everyday.			
	a) listen	b) listens		
	c) listening	d) listened		
88.	Past participle form of seek is:			
	a) Seeked	b) Seeken		
	c) Sook	d) Sought		
89.	He dislikes being talked			
	a) about	b) for		
	c) on	d) into		

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90.	Air pollution almost ev a) that now afflicts	very major city in the world. b) if now afflicts		
	c) now afflicts	d) what now afflicts		
91.	rd audacious is: b) Daring			
	c) Cowardly	d) Obvious		
92.	We are accustomed do a) in c) to	oing hard work. b) of d) with		
	0,00			
93.	It is time you your fac	ce.		
	a) wash	b) washed		
	c) would wash	d) will wash		
94.	It is fourteen years since I	It is fourteen years since I him.		
	a) seen	b) see		
	c) saw	d) have seen		
95.	We must <u>keep one's head</u>	while dealing with a comp		

95. We must keep one's head while dealing with a complicated problem. The meaning of underlined idiom in the given sentence is:
a) To be agile and active b) To keep calm
c) To think coherently d) Start a fight

In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, four words are suggested, one of which fits the blank appropriately. Find out the appropriate words.

In human life, there's always a feeling of want. It is this which makes man (96) Man yearns for things which he cannot get and feels sad looking back upon the past and looking forward (97) future. This preoccupation with the past and future does not

allow man to live (98) in the present. Thus there's always a pain in man's laughter, always a sense of (99) in the moment of enjoyments. That's why the poetry of man is the poetry of sorrow. 'Our sweetest songs are those that tell of (100) thoughts', has been rightly said.

96.	a) sad	b) disappointed	c) unhappy	d) mundane
97.	a) into	b) to	c) the	d) for
98.	a) carelessly	b) blissfully	c) happily	d) honorably
99.	a) want	b) loss	c) fulfillment	d) scarcity
100.	a) saddest	b) loftiest	c) happiest	d) sorrowful

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