SAMUNDRA INSTITUTE OF MARITIME STUDIES

DNS – SAMPLE QUESTION PAPER

Max Marks: 100
Duration: 70 mins

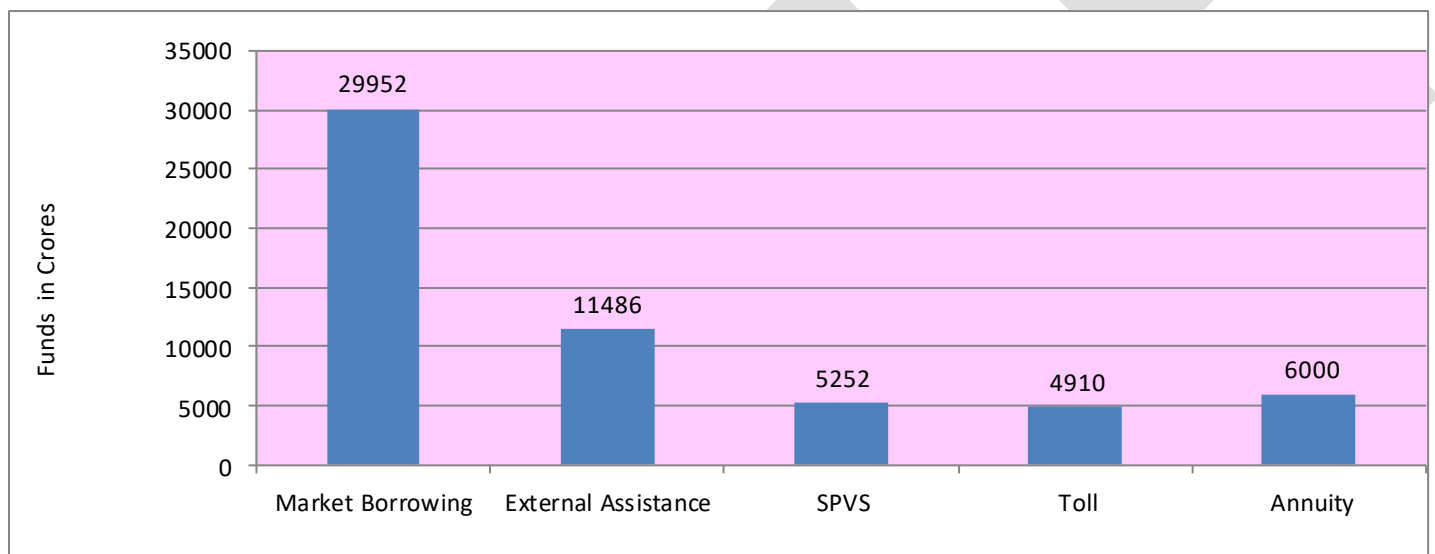**Total Qns:**45

Instructions:
- ➢ **Question no 1 to 44 are of objective type and carry different marking Scheme.**
- ➢ **Question no 45 to be written separately.**

Testing area: Visual perception and processing (VPP) (10 x 2 = 20)

The following bar-graph shows the sources of funds to be collected by the National Highways Authority of India (NHAI) for its Phase II projects. Study the bar-graph and answer the question that follows. (Question number 1 to 5)

Sources of funds to be arranged by NHAI for Phase II projects (in croresRs.)

1.	What percentage (approximately) of total funds is to be arranged through Market Borrowing		
	(A) 52 %	**(B)** 60 %	
	(C) 38 %	**(D)** 82 %	

2.	Near about 20% of the funds are to be arranged through:		
	(A) SPVS	**(B)** External Assistance	
	(C) Annuity	**(D)** Market Borrowing	

3.	If NHAI could receive a total of Rs. 9695 crores as External Assistance, by what percent (approximately) should it increase the Market Borrowing to arrange for the shortage of funds?		
	(A) 4.5%	**(B)** 7.5%	
	(C) 6%	**(D)** 8%	

4.	The approximate ratio of the funds to be arranged through Toll and that through Market Borrowing is		
	(A) 2: 9	**(B)** 1: 6	
	(C) 3: 11	**(D)** 2: 5	

5.	If the toll is to be collected through an outsourced agency by allowing a maximum 10% commission, how much amount should be permitted to be collected by the outsourced agency, so that the project is supported with Rs. 4910 crores?

(A) Rs. 6213 crores	**(B)** Rs. 5827 crores
(C) Rs. 5401 crores	**(D)** Rs. 5316 crores

In a school the periodical examination are held every second month. In a session during April 2001 - March 2002, a student of Class IX appeared for each of the periodical exams. The aggregate marks obtained by him in each periodical exam are represented in the line-graph given below. Marks Obtained by student in Six Periodical Held in Every Two Months During the Year in the Session 2001 – 2002. Answer the following questions based on the following line graph. (Question number 1 to 5)

Maximum Total Marks in each Periodical Exam

6.	What is the percentage of marks obtained by the student in the periodical exams of August, 01 and Oct, 01 taken together?

(A) 73.25 %	**(B)** 75.5 %
(C) 77 %	**(D)** 78.5 %

7.	In which periodical exams did the student obtain the highest percentage increase in marks over the previous periodical exams?

(A) June, 01	**(B)** August, 01
(C) Oct, 01	**(D)** Dec, 01

8.	What are the average marks obtained by the student in all the periodical exams during the last session?

	(A) 373	**(B)** 379	
	(C) 381	**(D)** 385	

9. The total number of marks obtained in Feb. 02 is what percent of the total marks obtained in April 01?

(A) 110 %		**(B)** 112.5 %	
(C) 115 %		**(D)** 116.5 %	

10. In which periodical exams there is a fall in percentage of marks as compared to the previous periodical exams?

(A) None		**(B)** Oct, 01	
(C) June, 01		**(D)** Feb, 02	

Testing area: Information processing speed (IPS) (4 x 2.5 = 10)

Questions: Read the hints and answer the questions.

The first step is for us to realize that a city need not be a frustrater of life; it can be among other things, a mechanism for enhancing life, for producing possibilities of living which are not to be realized except through cities. But, for that to happen, deliberate and drastic planning is needed. Towns as much as animals must have their systems of organs-those for transport and circulation are an obvious example. What we need now are organ systems for recreation, leisure, culture, community expression. This means abundance of open space, easy access to unspoilt Nature, beauty in parks and in fine buildings, gymnasia and swimming baths and recreation grounds in plenty, central spaces for celebrations and demonstrations, halls for citizens' meetings, concert halls and theatres and cinemas that belong to the city. And the buildings must not be built anyhow or dumped down anywhere; both they and their groupings should mean something important to the people of the place.

11. The author talks about 'Unspoilt Nature'. In what way can Nature remain unspoilt?

(A) If Nature is not allowed to interfere with people's day-to-day life.

(B) By building cities with the system of organs like those of animals.

(C) By allowing free access to parks and open spaces

(D) By allowing Nature to retain its primitive, undomesticated character.

12. The word 'drastic' in the passage means :

(A) orderly

(B) powerful

(C) consistent

(D) determined

13. The opening sentence of the passage implies that :

(A) the possibilities of living a decent life cannot be found in a city.

(B) only a city can provide the means to lead a full life.

(C) among other places, a city can also help man to lead a successful life.

(D) a city provides better opportunities for good living than a village.

14. According to the author, the function of a city is to :

	(A) provide adequate community expression.	**(B)** make available centres of recreation and public gatherings.
	(C) facilitate traffic and communication.	**(D)** raise the tone of life and make it more meaningful.

Testing area: Science and Abstract reasoning (SAR)   **(10 x 2 = 20)**

15. A 100 N force acts horizontally on a block of 10 Kg placed on a horizontal rough table of coefficient of friction = 0.5. If g at the place is $10 m/s^2$, the acceleration of the block is

(A)	zero m/s^2	**(B)**	$10 m/s^2$
(C)	$5 m/s^2$	**(D)**	$5.2 m/s^2$

16. An open pipe is suddenly closed at one end with the result that the frequency of third harmonic of the closed pipe is found to be higher by 100 Hz than the fundamental frequency of the open pipe. The fundamental frequency of the open pipe is

(A)	200Hz	**(B)**	300Hz
(C)	240Hz	**(D)**	480Hz

17. Two bodies of masses m_1 and m_2 have equal K.E. Their momenta shall be in the ratio of

(A)	$m_1 : m_2$	**(B)**	$m_2 : m_1$
(C)	$\sqrt{m_1} : \sqrt{m_2}$	**(D)**	$\sqrt{m_2} : \sqrt{m_1}$

18. $kg.m/s^2$ is the unit of

(A)	momentum	**(B)**	speed
(C)	acceleration	**(D)**	force

19. Melting of ice under increased pressure and refreezing again when a pressure is removed is called

(A)	condensation	**(B)**	cooling
(C)	regelation	**(D)**	refrigeration

20. Boyle's law is applicable in

(A)	isochoric process	**(B)**	isothermal process
(C)	isobaric process	**(D)**	isotonic process

21. If g denotes the value of acceleration due to gravity at a point distant r from the center of earth of radius R. If r < R, then

(A)	$g \propto r^2$	**(B)**	$g \propto r$
(C)	$g \propto 1/r^2$	**(D)**	$g \propto 1/r$

22. What comes next in the given series?
$ZA_5, Y_4B, XC_6, W_3D,$ _____

(A)	E_7V	**(B)**	V_2E

	(C) VE$_5$	**(D)** VE$_7$	

23. What comes next in the given series?
QPO, NML, KJI, _____, EDC

(A) HGF		**(B)** CAB	
(C) JKL		**(D)** GHI	

24. In alphabet series, some alphabets are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.
_ _ aba _ _ ba _ ab

(A) abbba		**(B)** abbab	
(C) baaab		**(D)** bbaba	

Testing area: Spoken and written language (SWL)   **(10 x 2 = 20)**

Answer the following with the most suitable option.

25. What _____ pity! Eric could not go to _____ football match that was held on _____ school field. It was really _____ exciting game

(A) an,the,an,a		**(B)** a the,an,a	
(C) a, the,the,an		**(D)** the the,an	

26. They held out for some time but eventually had to _____ in and admit defeat.

(A) set		**(B)** take	
(C) cave		**(D)** get	

27. __ golden retriever is a marvelous pet for children.

(A) a		**(B)** an	
(C) None of these		**(D)** the	

28. A common noun for the pronoun "he" would be _____.

(A) him		**(B)** . George	
(C) man		**(D)** his	

29. She is sitting __ a chair.

(A) above		**(B)** over	
(C) at		**(D)** on	

30. _____ United States has encouraged the use of the private automobile as opposed to the use of public transit

(A) None of these		**(B)** the	
(C) a		**(D)** An	

31.	When you go to _____ seaside, remember not to swim near _____ rocks.		
	(A) No article	**(B)** the, the	
	(C) an	**(D)** An, an	

32.	Be sure that everyone brings _____ own book		
	(A) It's	**(B)** their	
	(C) theirs	**(D)** his	

33.	They will inform the police.		
	(A) The police are informed by them.	**(B)** The police will be informed by them.	
	(C) Informed will be the police by them.	**(D)** The police will inform them.	

34.	I think that sign means we _____ enter the building. Look, there's a security guard too.		
	(A) won't	**(B)** have to	
	(C) mustn't	**(D)** couldn't	

Testing area: Mathematical calculation (MC)   **(10 x 2 = 20)**

35.	The sum of three integers in A.P. is 15 and their product is 80. The integers are		
	(A) 4, 5, 6	**(B)** 0, 5, 10	
	(C) 2, 5, 8	**(D)** None of these	

36.	The value of (tan1° tan 2° tan3° ... tan 89°) is		
	(A) 0	**(B)** 1	
	(C) 2	**(D)** 1/2	

37.	$If \, cosx = \sin (\cot^{-1}1)$, then x = ?		
	(A) 30^0	**(B)** 60^0	
	(C) 45^0	**(D)** 90^0	

38.	If $\tan A = \frac{1}{3}$, $\tan B = \frac{1}{7}$ then what is the value of $2A + B$?		
	(A) 30º	**(B)** 45º	
	(C) 60º	**(D)** 135º	

39.	A student is to answer 10 out of 13 questions in an examination such that he must choose at least 4 from the first five questions. The number of choices available for him are		
	(A) 346	**(B)** 280	
	(C) 210	**(D)** 196	

40.	Two cars leave at the same time, one from East to west and the other from West to East on the same road. The first car is moving at an average speed of 36 km/hr and the second car is moving at an average of 72 km/hr. The cars cross each other in 300 seconds. What was the original distance between the cars they started moving?

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		(A)	600 m	**(B)**	680 m
		(C)	720 m	**(D)**	900 m
41.	What is the area of a largest right angled triangle that can be drawn inside a square of 7 cms.?				
		(A)	14 cm^2	**(B)**	21 cm^2
		(C)	24.5 cm^2	**(D)**	49 cm^2
42.	Two boys blow a balloon each. One balloon is thrice the diameter of the other. What is the ratio of the volume of the bigger balloon to volume of the smaller balloon?				
		(A)	9	**(B)**	16
		(C)	27	**(D)**	81
43.	Between 0900 AM to 1200 Noon, what is angle through which the hour hand and minute hand of a wall clock move?				
		(A)	90, 1080	**(B)**	120, 360
		(C)	90, 540	**(D)**	180, 720
44.	A bucket of water at 85^0C is kept in a room .After 5 mins the temperature of water was found to be 75^0 C. How much more time will be required for water to reach 65^0 C				
		(A)	Less than 5 mins	**(B)**	5 mins
		(C)	More than 5 mins	**(D)**	Data inadequate

Testing area: Letter Writing (10 x 1 = 10)

45.	Write an application for the post of an Accountant to the General Sales Manager, Champion Photo Chemistry Ltd, Indra Prakash Building New Delhi .You have seen the advertisement in the Hindustan Times. You are Sonu/Soumay living at GK Villa, KG Marg, New Delhi.

======= ALL THE BEST =========