Time: 120 Minutes

Maximum Marks: 100

CHANDIGARH NTSE STAGE 1 2020-21 _SAT

Instructions to the Candidates

Read the following instructions carefully before you answer the questions:

- 1. Answer are to be given on a SEPRATE ANSWER SHEET.
- **2.** Please write your twelve digits Roll Number very clearly on the Test-booklet and Answer Sheet as given in your admission card.
- **3.** Please note and follow the instructions given on the answer sheet for writing the answers.
- **4.** Darken the CIRCLE with pen for answering the question in the appropriate space against the number corresponding to the question you are answering.
- **5.** There are 100 question in the test.
- **6.** Since all questions are compulsory, do not try read the whole question paper before beginning to answer it.
- **7.** If you do not know the answer to any question, do not spend much time on it and pass on to the next one. Time permitting, you can come back to the question, which you have left in the first instance and try them again.
- **8.** Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
- 9. Rough work can be done anywhere in the booklet but not on Answer sheet/loose paper.
- **10.** Every correct answer will be awarded one mark.
- **11.** Please return the answer sheet to the invigilator after the test.

SOCIAL SCIENCE

1.	 Which of the following indicated the main objectives of F (1) Constitutional Monarchy (2) Right to vote for all men above 25 years of age (3) Declaration of Rights of man and citizens (4) Only men of 25 years and paid taxes were allowed 	=rencl I to vo	n Constitution in 1791. te
	(A) All the above(C) 1, 2, 3	(B) (D)	2, 3, 4 1, 3, 4
2.	The name associated with "APRIL THESES" is (A) Karl Marx (C) Lenin	(B) (D)	Robert Owen Stalin
3.	BUDENOVKA is (A) Russian Coat (C) Russian Tie	(B) (D)	Russian Hat Russian Uniform
4.	Arrange the following in the correct Chronological order(1) Pearl Harbour Attack(3) German Invasion of Poland	of the (2) (4)	e events German Invasion of Russia Hitler pulling Germany out of League of Nations
	(A) 1 2 3 4 (C) 4 3 1 2	(B) (D)	2 3 1 4 4 3 2 1
5.	 Consider the following statements and choose the correct (1) British invited German expert, DIETRIECH BRAND (2) Brandis was made first inspector General of Forest (3) Brandis set up Indian Forest Serviced in 1864 (4) Brandis helped formulated the Indian Forests Act in 	ect on DS for ts n 186	es. advice in saving forests 9
	(A) 1234 are correct(C) 123 are correct	(B) (D)	only 134 are correct only 1 is correct
6.	Dhangars were the pastoral community of (A) Gujrat (C) Karnataka	(B) (D)	Maharashtra Chhattisgarh
7.	Name the French philosopher who explained-What mak (A) JEAN-JACQUES ROUSSEAU (C) MONTESQUIE	kes the (B) (D)	e nation? FREDERIC SORRIEU ERNST RENAN
8.	 Arrange the following into correct Chronological order: (1) Arrival of Simon Commission in India (2) Lord Irvin announced Dominion status of India (3) Gandhiji sent the letter stating 11 demands (4) Poona Pack (A) 1 2 3 4 (C) 3 4 1 2 	(B) (D)	2 3 4 1 4 1 2 3
9.	 Which of the following statements are false: (1) Silk route linked ASIA-EUROPE-NORTH AFRICA (2) Silk route was route both by land and sea (3) Buddhism travelled across silk route (4) Precious metals-Gold & silver flowed from Asia to I (A) 1 and 4 (C) only 3 	Europ (B) (D)	e only 1 only 4
10.	Europeans were attracted to Africa, why? (A) By its Natural Beauty (C) By its vast land resources and mineral wealth	(B) (D)	To expand industries All the above
11.	of Korea is among world's oldest existed bo (A) Diamond Sutra (C) Jikji	ook w (B) (D)	ith moveable metal types printing. Bible Ukiyo

12.	 Following statement refer to the life of Baba Ramchandra (A) Peasants were led by Baba Ramchandra in Awadh (B) Baba Rama Chandra was a sanyasi (C) He worked as indentured labourer in Assam (D) He headed Oudh Kisan Sabha with J.L. Nehru 	in Awadh. Choose the false statement.
13.	 choose the right option of peaks in descending order of t (1) Kanchenjunga (3) Anaimudi (A) 1 2 3 4 (C) 3 4 1 2 	neir heights. (2) Dodabetta (D) Nanda Devi (B) 2 3 4 1 (D) 1 4 3 2
14.	River Kaveri makes the second biggest water fall in India (A) Jog falls (C) Shiva Samundram falls	. It is (B) Duduwa falls (D) Dudhsagar falls
15.	MAHAWAT is the local name ofrainfalls in India (A) Summer (C) Spring	an Plains. (B) Winter (D) Autumn
16.	 Which of the following are the features of National popula (1) Imparts free and compulsory education upto 14 yea (2) Reducing infant mortality rate to below 30 per 1000 (3) Achieving universal immunization of children (4) Promoting early marriage among girls 	ation Policy-2000 rs of age live births
	(A) 1 2 3 4 (C) 1 2 3 only	(B) 1 3 4 only (D) 2 3 4 only
17.	Laterite soil is very useful in growing(A) Rice, Wheat, Mustard(C) Pulses, sugarcanes and resins	(B) Tea, coffee and Cashewnuts(D) Cotton, Maize
18.	Match the following	
	MULTI PURPOSE DAMS	NAME OF RIVERS
	A. Rana Pratap Sagar	i. Bhagirathi River
	B. Salal project	ii. Chambal River
	C. Tehri Dam	iii. Krishna River
	D. Nagarjuna Sagar Dam	iv. Chenab River
	(C) $A-iii, B-i, C-iii, D-iv$	(D) A–ii, B–iii, C–ii, D–ii (D) A–iv, B–iii, C–ii, D–i
19.	Average climatic conditions for growing sugar case are	
	(A) $21^{\circ}C = 27^{\circ}C$ (75 cm = 100 cm rainfall)	(B) 25°C –20°C (25 cm –50 cm rainfall)
	(C) Below 18° C (75 cm -100 cm rainfall)	(D) $21^{\circ}C - 27^{\circ}C$ (50 cm -65 cm rainfall)
20.	The first ever cement plant set up in India was	
	(A) Mumbai 1i904	(B) Kolkata 1944
	C) Chennai 1940	D) Chennai 1904
21.	The river associated with national water way no. 2 is	
	(A) Ganges	(B) Sutleg
	(C) Kaveri	(D) Brahmaputra

22. Consider the following facts and decide which of these facts would you call a democracy.

(1) Elections are held regularly

- (2) Voter are bribed by the leaders
- (3) Govt. arrests the leaders who protest peacefully against the wrong policies
- (4) Govt. works for the welfare of the people
- (B) 1 and 2 (A) 1, 2, 3, 4 (C) only 1 (D) 1 and 4

Who, among the following leaders was boron in Saudi Arabia and opposed Muslim separatist politics and later 23. became first education minister of India

(A) Jaipal Singh (B) Abul Kalam Azad (D) Dr. Zakir Hussain (C) G.Durgabai Deshmukh

- "Nyaya Yuth" (Struggle for justice) was movement launched by Chaudhary Devi Lal against which ruling party in 24. Haryana?
 - (A) Janta Dal
 - (C) BSP

- (B) Congress (D) BJP
- 25. The constitution of Belgium has been amended four times between the years.
 - (A) 1970-1992
 - (C) 1972-1992

- (B) 1970-1990
- (D) 1970-1993
- 26. Which country among the following countries suffered disintegration due to political fights on the basis of religious and ethnic identities.
 - (A) Yuqoslavia
 - (C) Belgium

- (B) India
- (D) Netherland
- Which of the following political parties came to power in Bolivia in 2006. 27.
 - (A) The communist party
- (B) The republic party

(C) The socialist party

- (D) The conservative party
- 28. Match the following regionals political parties with their symbols:

Political party	Symbol
A. Telegu Desam Party	i. 60
B. YSR Congress Party	
C. Shromani Akali Dal	
D. The Conservative Party	iv.

- (A) A-ii, B-iii, C-iv, D-i
- (C) A-i,B-iv, C-iii, D-ii

(B) A-ii, B-iii, C-i,D-iv (D) A-iv, B-iii, C-ii, D-i

(B) A-iii, B-i,C-ii

(D) A-iii, B-ii, C-i

29. Match the following:

Α.	Electricity Bill	i.	Fixed Capital
В.	Computers	ii.	Human Capital
C.	Labour	iii.	Working Capital

- (A) A-i,B-ii, C-iii
- (C) A-ii, B-iii, C-i

A person is considered poor if his or her income level falls below a given...... (A) Maximum level necessary to fulfil needs

- (C) Both 1 and 2
- Prime Minister Rozgar vojana was started in.....
 - (A) 1973 (C) 1993

30.

31.

- 32. Yellow card is issued to.....
 - (A) People above poverty line
 - (C) People in government jobs

(B) Minimum level necessary to fulfill basic needs

(D) Level below per capita income of the country

- (B) 1983
- (D) 2003

(B) People below poverty line

- (D) People in private sector
- 33. Mr. Dhiman took a loan of Rs. 20 Lakhs Mr. Dhiman took a loan of Rs. 20 Lakhs from bank to purchases a house. The annual rate of interest on the load is 12% per annum and loan is to be repaid in 10 years in instalments. The bank retains the papers of new houses as collateral, which will be returned to Mr. Dhiman only when he repays the entire loan amount with interest.

Analyze the loan information given above and choose the right option for the same.

- (A) Mode of repayment
- (C) Terms of Credit

- (B) Interest on loan
- (D) collateral

34.	 There are two statements marked as Assertion (A) and Reason (R). Read the statements carefully and choose the correct option. Assertion (A): The good and services are produced globally. Reason (R): Production process is divided into small parts but sis not spread out across the globe. (A) Both A and R are true and R is correct explanations of A (B) Both A and R are true and R is not the correct explanation of A (C) A is true and R is false (D) A is false and R is true 						
35.	Which one of the following minerals belong to the category(A) Gold(E(C) Mangnese(E	of ferrous minerals? 3) Copper 9) Bauxite					
36.	Which one of the following groups of cities is connected by(A) Delhi-Amritsar(E(C) Delhi-Mumbai(E	the National Highway no. 7/ 8) Delhi-Kolkata 9) Varanasi-Kanyakumari					
37.	Name the place where the Non-cooperation movement tur(A)Champaran(C)Nagpur(E)	ned violent? 3) Kheda 9) Chauri Chaura					
38.	Whose name of the following is associated with Kesari?(A) Jyotiba Phule(E(C) Bal Gangadhar Tilak(E	8) Dr. Ambedkar 0) Mahatma Gandhi					
39.	Who wrote the book 'Hind Swaraj'?(A) Mahatma Gandhi(E(C) Lal Bahadur Shastri(E	3) Jawaharlal Nehru)) Maulana Azad					
40.	In which of the following year was Treaty of Vienna signed (A) 1811 (E (C) 1815 (I	3) 1810 D) 1812					
	CHEMISTR	<u>Y</u>					
41.	Which of the following compound is responsible for tarnishing of silver?(A) Ag2O(B) Ag2CO(C) Ag2S(D) AgCN						
42.	Vinger on reaction with baking soda produces a gas which milkiness is due to the formation of:(A) Calcium Oxalate(E(C) Calcium Hydroxide(E	when passed through lime water turns it milky. The 3) Calcium Carbonate 2) Calcium Bicarbonate					
43.	Match list-I with List-ii and select the correct answer by usi	ng the codes given below the list:					

List-I (Named of Acid)	List–II	(Source)
(A)	Lactic acid	(i)	Tamarind
(B)	Malic Acid	(ii)	Curd
(C)	Acetic Acid	(iii)	Tomato
(D)	Tartaric Acid	(iv)	Vinger
1			

(A)	(A) (i)	(B) (iv)	(C) (ii)	(D) (iii)	(B)	(A) (ii)	(B) (i)	(C) (iv)	(D) (iii)
(C)	(A) (ii)	(B) (i)	(C) (iii)	(D) (iii)	(D)	(A) (ii)	(B) (iii)	(C) (iv)	(D) (i)

When a coper vessel is exposed to moist air for long time it acquires a dull green coating. 44. This coating is a mixture of:

- (A) Copper Oxide and Copper Carbonate(C) Copper Oxide and Copper Hydroxide
- (B) Copper Hydroxide and Copper carbonate(D) Copper Peroxide and Copper Carbonate

- 45. The Buckminster fullerene has
 - (A) 60 Carbon atoms(C) 62Carbonatoms

- (B) 58 Carbonatoms
- (D) 56 Carbonatoms

46.	Plaster of pairs can be prepared by heating (A) CaSO ₃ ,2H ₂ O (C) CaCO ₃ ,2H ₂ O	_ to a (B) (D)	a temperature of 100ºC. CaCl ₂ ,2H ₂ O CaSO4,2H ₂ O
47.	The Atomic number of four elements P, Q, R and S are 6 metalloid is:	6,8,14	4 and 16 respectively. Out of these element the
	(A) P (C) R	(B) (D)	Q S
48.	Which of the following metals and nonmetals is found in	theli	quid state at room temperature?
	(A) Gallium and lodine(C) Mercury and Bromine	(B) (D)	Gallium and Bromine Mercury and Sulphur
49	The fluorescence on the walls of discharge tube is due to.(A) Cathode rays(C) Canal rays	(B) (D)	Anode rays None of the above
50.	Isotopesofanelementalwayshave the(A) Same number of Proton(C) Same Charge	(B) (D)	Same number of the Neutron None of the above
51.	Li is similar in behaviour to (A) C (C) Mg	(B) (D)	Si Be
52.	 The velocity of a reaction is defined as the (A) increase of concentration of reactants per unit time (B) decrease of concentration of reactants per unit time (C) increase of concentration of products per unit time (D) both B and C 		
53.	Property of self combination of the atom of the same ele(A) Protonation(C) Coronation	men (B) (D)	t of form long chain is known as Carbonation Catenation
	PHYSIC	<u>:s</u>	
54.	When light passes from one medium to another medium.(A) Refractive index(C) Wavelength	, whi (B) (D)	ch of the following remains unchanged. Frequency Velocity
55.	Two waves have intensities in the ratio 1:9. If these waves printensities is	roduc	ce interference, then ratio of maximum and minimum
	(A) 3:1 (C) 9:1	(B) (D)	4:1 16: 1
56.	The minimum wave length of the X-rays produced by electro directly proportional to	ns ao	ccelerated through a potential difference of V (Volt) is
	 (A) √V (C) 1/√V 	(B) (D)	V ² 1/V
57.	A radioactive element has half life period 1600 years. After 6 (A) 1/2 (C) 1/8	6,400 (B) (D)) years, what amount will remain? 1/16 1/4
58.	For a transistor Ic/Ie = 0.96. The current gain in common (A) 6 (C) 24	emit (B) (D)	tter configuration is 12 48
59.	The mean free path of molecules of a gas (radius r) is inv (A) r^3 (C) r	verse (B) (D)	ely proportional to : $r^2 r^{1/2}$

60. If force(F), velocity (V) and time (T) are taken as fundamental units, then dimension of mass are:

(A)	[FVI']	(B)	[FVI ⁻²]
(C)	[FV ⁻¹ T ⁻¹]	(D)	[FV ⁻¹ T]

A conducting sphere of radius R isgiven a charge Q. The electric potential and the electric field at the centre of 61. sphere respectively are

(A)	zero and $\frac{Q}{4\pi\epsilon_0 R^2}$	(B)	$\frac{Q}{4\pi\epsilon_0R}$ and zero
(C)	$\frac{Q}{4\pi\epsilon_{e}R}$ and $\frac{Q}{4\pi\epsilon_{e}R^{2}}$	(D)	Both and zero

62. In an ammeter 0.2% of main current passes through the galvanometer. If resistance of galvanometer is G, the resistance of ammeter will be:

(A)	$\frac{1}{499}$ G	(B)	$\frac{499}{500}$ G
(C)	$\frac{1}{500}$ G	(D)	$\frac{500}{499}G$

- 63. If the focal length of objective lens is increased then magnifying power of:
 - (A) Microscope will increase but that of tele scope will decrease
 - (B) Microscope and telescope both will increase
 - Microscope and telescope both will decrease (C)
 - (D) Microscope will decrease but that of telescope will increase
- Following figures show the arrangement of bar magnets in different configuration. Each magnet has magnetic 64. dipole moment \rightarrow M. Which configuration has the higher net magnetic dipole moment?



- 65. For a satellite, escape velocity is 11 kms⁻¹. If the satellite is launched at an angle of 60⁰ with vertical, the escape velocity will be
 - (A) 11 Kms⁻¹
 - (C) $11/\sqrt{3}$ Kms⁻¹

(B) $11\sqrt{3}$ Kms⁻¹

- (D) 33 Kms⁻¹
- 66. The force F acting on a particle of mass m is indicated by force -time graph shown below: The change in momentum of the particle over the time interval form zero to 8s is:
 - (A) 24 Ns
 - (B) 12 Ns
 - (C) 20 Ns
 - (D) 6 Ns



BIOLOGY

- 67. Readthefollowingstatement and select the correct option
 - Windpollinated flowers need to produce more amount of pollen grain (1)
 - Seeds from cross pollinated flowersproduce weaker and less healthy plants. (2)
 - A is false, B is true (A)
 - (C) Both A and B are true

- (B) A is true, B is false (D) Neither A nor B is true
- 68. Which of the following is not controlled by medulla
 - (A) Blood pressure
 - (C) Body posture

- Salivation (B)
- (D) Vomiting

- 69. Among the statement give below select the ones that correctly describe the concept of sustainable development.1. Planned growth with minimum damage of environment.
 - Growth irrespective of the extent of damage to the environment.
 - 3. Stopping all developmental
 - Growth that is acceptable to all the stakeholders.
 - (A) (i) and (iv)
 - (C) (ii) and (iv)

- (B) (ii) and (iii)
- (D) (iii) only
- 70. Which one of the following is a definition of ecosystem.
 - (A) Different communities of plants, animals and microbes together with their environment.
 - (B) Different communities of plants and microbes and their environment.
 - (C) A community of organisms interacting with one another.
 - (D) An association of seven plants and animals
- 71. The correct pathway of blood circulation is
 - (A) Auricles \rightarrow ventricles \rightarrow Arteries \rightarrow veins
 - (B) Ventricles \rightarrow auricles \rightarrow Veins \rightarrow Arteries
 - (C) Ventricle \rightarrow Veins \rightarrow Arteries \rightarrow Auricles
 - (D) Veins \rightarrow Ventricles \rightarrow Arteries \rightarrow Auricles
- 72. Choose the event that does not occur in photosynthesis.
 - (A) Absocrption of light by chlorophye
 - (B) Reduction of carbon dioxide to carbohydrates
 - (C) Oxidation of carbon to carbondioxide
 - (D) Conversion of light energy to chemical energy
- 73. Which one of the following statement is true?
 - (A) In human, there are two pairs of sex chromosomes
 - (B) A child who inherits an X-chromosome from father, will be a boy.
 - (C) A child who inherits a Y-chromosome from father, will be a girl
 - (D) A child who inherits an X-chromosome from father, will be a girl
- 74. The accumulation of non-biodegradable substances inafood chain inincreasing amount at each. higher trophic level is known as
 - (A) Accumulation(C) Pollution

- (B) Biomagnification
- (D) Eutrophication
- 75. By adding diluted saliva in starch solution, the starch solution stops giving iodine tests. This proves-
 - (A) Starch becomes non reactive in the presence of saliva
 - (B) Saliva has enzyme which degrades starch into sugars.
 - (C) Starch was hydrolysed by water before adding saliva
 - (D) None of these

76. Iodine is necessary for the synthesis of which hormone?

- (A) Auxin
 - C) Adrenaline (D) Insulin

77. In human males, all the chromosomes are paired perfectly except one. This unpaired chromosome is

(A) Large chromosome(C) Y-chromosome

(B) Small chromosome

Thvroxin

(B)

(D) X-chromosome

78. The main cause of abundant coliform bacteria in the river Ganga is (A) Disposal of unburnt corpses into water (B) Disch

- (B) Discharge of effluents from electroplating industries
- (D) Immersion of ashes
- **79.** Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as
 - (A) Eutrophication

(C) Biomagnification

(C) Washing of clothes

- (B) Pollution
- (D) Accumulation
- 80. Which of the following is an example of homologous organs?
 - (A) Our arm and a dog's foreleg(C) Potato and runners of grass

- (B) Our teeth and an elephant's tusk
- (D) All of the above

MATHEMATICS

81.	A he smal (A) (C)	mispherical bowl of internal radius 9 cm is fully of liq Il bottle each of diameter 3 cm and height 4cm. How 52 53	juid. T man (B) (D)	The liquid is to be filled into the cylindrical shaped y bottles are needed to empty the bowl? 54 51
82.	A sh (A) (C)	ip sails 12 km due north of a port and then sails 14 k 15.4 18.4	km du (B) (D)	ie east. How far is the ship from port? 16.4 17.4
83.	The	area of shaded portion in the given figure,		
		7		
	(A) (C)	77 sq. units 7 72 sq. units 7	(B) (D)	74 sq. units 89.5 sq. units
84.	The	p th term of an A.P. is q and the q th terms is p. find th	er th t	erm
	(A) (C)	p+q+r	(D)	p + q - r
85.	lf the refle	e angle of elevation of a cloud from a point 'h' meter ction in the lake is ' β ', find the distance of the cloud t	abov from f	e a lake is ' α ' and the angle of depression of its the point of observation.
	(A)	$\frac{2h \sec \alpha}{\tan \beta - \tan \alpha}$	(B)	$\frac{2h}{\tan\beta - \tan\alpha}$
	(C)	$\frac{2 \operatorname{h} \sec \alpha}{\tan \beta + \tan \alpha}$	(D)	$\frac{2h}{\tan\beta + \tan\alpha}$
86.	Shilp	ba sells apples to her customer at the cost price itsel	f but	uses a weight of 800g instead of 1kg weight. Find
	the p (A)	orofit percentage. 30%	(B)	35%
	(C)	25%	(D)	20%
87.	lfar	natural number ' α ' is divided by 7, the remainder is 5	.lfa	natural number ' β ' is divided by 7, the remainder is $3r + 5$
	3. Ir	The remainder is 'r' if α + β is divided by 7. Find the val	ue of	
	(A) (C)	8	(B) (D)	/ 11
88.	Ruha resp (A) (C)	an's salary in 2019 is Rs. 1,77,100, His salary from 2 ectively to reach 2019 salary figures. What was his s Rs. 1,00,000 Rs. 1,15,000	2016 salary (B) (D)	has risen annually by 10, 15 and 40 percent / in 2016. Rs. 1,20,000 Rs. 95,000
89.	A rai	ilway engine is travelling along a circular railway trac	k of r	adius 1500 metres with as speed of 66 km/hr. Find
	(A) (C)	5° 7°	(B) (D)	6° 8°
90.	lf x n (A) (C)	nen can do a work in 8 days and (x + 4) can do the v 10 12	work i (B) (D)	in 6 days then x is equal to 6 24
91.	lf x ² (A) (C)	+ y^2 + z^2 = r^2 where x = r cos α cos β , y = r cos α sin β r cos α r tan ∞ tan β	, then (B) (D)	z has one of the following values r tan \propto cos β r sin α

92. Find the value of 'x' from the given figure in which O is the centre of circle.



(A)
$$a = 0, b = \frac{7}{3}$$

(B) $a = \frac{7}{3}, b = 0$
(C) $a = 7, b = 3$
(D) $a = 3, b = 7$

CHANDI	<u>GARH NTSE S</u>	TAGE 1 20	20-21 (SAT)	ANSWER KEY
1. C	2. C	3. B	4. D	5. A
6. B	7. D	8. A	9. <mark>**</mark>	10. C
11. C	12. C	13. D	14. C	15. B
16. C	17. B	18. B	19. A	20. D
21. D	22. D	23. B	24. B	25. D
26. A	27. C	28. A	29. B	30. B
31. C	32. B	33. C	34. C	35. B
36. D	37. D	38. C	39. A	40. C
41. C	42. D	43. D	44. B	45. A
46. A	47. C	48. C	49. A	50. A
51. C	52. D	53. D	54. B	55. B
56. C	57. B	58. C	59. B	60. D
61. B	62. A	63. B	64. B	65. A
66. C	67. B	68. C	69. A	70. A
71. A	72. C	73. D	74. B	75. B
76. B	77. C, D	78. A	79. C	80. D
81 B	82. C	83. D	84. B	85. A
86. D	87. A	88. A	89. C	90. C
91. D	92. B	93. D	94. A	95. B
96. B	97. D	98. B	99. D	100. B

** Not option is correct.