SSC (MTS) Exam. Practice Set

Answers with Explanation

SESSION-I

Part-I

Numerical and Mathematical Ability
1. (b) Train A from Chennai to Ernakulam travels at a speed of 20 km / and starts at 6:30 AM.
Train B from Ernakulam to Chennai starts at 7:15 AM (after 45 minutes) travels ¼ faster than A. so
$$(20 + 20 \times 1/4 = 25 \text{ Km/h})$$

Distance between the trains at 7:30 is $(150 - 20 \times 3/4) = 150 - 15 = 135 \text{ km}$
Relative speed of trains is $20 + 25 = 45$
 $135/45 = 3 \text{ hrs.}$
So, 3 hours after 7:15 AM
Answer is (b). 10:15 AM
2. (b) In 2015, the 20-40 percentage was 60. In 2019, it fell to just 16
So, fall is {(60-16)/60} × 100
 $= 44/60 \times 100 = 73.4$
3. (a) Number of people of 10-20 (in 2015) group is 600
Number of people of 10-20 in 2019 is 1400
So, the difference is 1400 - 600 = 800
4. (c) The base percent is 60 (2017)
And final is 70 (2019)
So, gain is (70-60)/60 × 100 = 16.7
5. (d) $3 \times 5 \text{ men } + 7 \times 5 \text{ women}$
 $= 4 \times 4 \text{ men } + 6 \times 4 \text{ women}$
 $\Rightarrow 3 \text{ men } + 7 \text{ women } = 40 \text{ women}$
 $\therefore 1 \text{ man } = 11 \text{ women}$
 $\Rightarrow 3 \text{ men } + 7 \text{ women } = 40 \text{ women}$
 $\therefore M_1D_1 = M_2D_2$
 $\Rightarrow D_2 = 20 \text{ days}$
6. (b) Marked Price of the article is
 $= \frac{100 \times 3168}{100 - 34} = \frac{2}{4800}$
7. (b) $2p + \frac{1}{p} = 4 \Rightarrow p + \frac{1}{2p} = 2$
 $\therefore (p)^3 + \left(\frac{1}{2p}\right)^3$

$$= \left(p + \frac{1}{2p}\right)^{3} - 3p \cdot \frac{1}{2p} \left(p + \frac{1}{2p}\right)$$
$$= 2^{3} - \frac{3}{2} \times 2 = 5$$

8. (d) Burners
$$x = \frac{625 \times 8 \times 6 \times 6}{450 \times 10 \times 5} = 8$$

9. (b) By Alligation rule
Mixture I Mixture II
Acid =
$$\frac{4}{7}$$
 Acid = $\frac{5}{8}$
 $\frac{3}{5}$

$$\frac{5}{8} - \frac{3}{5} = \frac{1}{40} \qquad \qquad \frac{3}{5} - \frac{4}{7} = \frac{1}{35}$$

$$\therefore \text{ Required ratio} = \frac{1}{40} : \frac{1}{35} = 35 : 40 = 7 : 8$$

10. (d) Overall increment in the total age =
$$8 \times 2 =$$

16 yr
 \therefore Total age of two new men = $21 + 23 + 16$
= 60 yr
 \therefore Their average age = $\frac{60}{2} = 30$ yr

11. (b) Part of cistern emptied in 1 hour

$$=\frac{1}{5} - \frac{1}{8} = \frac{8-5}{40} = \frac{3}{40}$$
 Expression
$$\therefore \frac{3}{40} \text{ part is emptied in 1 hour.}$$

$$\therefore \frac{3}{4}$$
 part is emptied in $\frac{40}{3} \times \frac{3}{4} = 10$ hours

12. (a) Circumference of circle = 11cm $2\pi r = 11$ $r = \frac{11 \times 7}{22 \times 2} = \frac{7}{4}$ cm

Now, area of the sector AOB



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 $=\frac{\theta}{360^{\circ}}\times\pi r^{2}$ 16. (b) In $\triangle AOD$, by Pythagoras theorem $OA^2 = AD^2$ $+ OD^2$ দ্যাগুৰাটে $=\frac{60^{\circ}}{360^{\circ}}\times\frac{22}{7}\times\frac{7}{4}\times\frac{7}{4}$ sq cm OD = $\sqrt{(13)^2 - (12)^2} = \sqrt{169 - 144} = 5$ cm $=\frac{77}{48}=1\frac{29}{48}$ sq cm 13. (a) $\cos x + \cos y = 2$ As we know that the maximum value of cos x is '1' or less than '1' দ্য গুৰায়ে $(\cos x)_{max} \leq 1$ *.*.. Now, in $\triangle AO'D$ $\cos x = 1$ and $\cos y = 1$ \Rightarrow Similarly, O'D = $\sqrt{(15)^2 - (12)^2}$ $x = \cos^{-1} 1$ and $=\sqrt{225-144} = \sqrt{81} = 9$ cm $y = \cos^{-1} 1$ $\therefore OO' = OD + O'D$ $\mathbf{x} = \mathbf{y} = \mathbf{0}$ *.*.. $\therefore \sin x + \sin y = 0$ $\therefore OO' = 5 + 9 = 14 \text{ cm}$ দিন গুবায়ি 14. (b) $\frac{x}{2x^2+5x+2} = \frac{1}{6}$ 17. (c) Total salary for 20 days = Salary of one day \times number of days $\Rightarrow 2x^2 + 5x + 2 = 6x$ = ₹ (75 × 20) = ₹ 1500 $\Rightarrow 2x^2 + 2 = 6x - 5x = x$ Actual salary received = ₹1140 $\Rightarrow 2(x^2 + 1) = x$ Difference = ₹ (1500 - 1140) = ₹ 360 Money deducted for 1 day's absence from On dividing by 2, we get $x^2 + 1 = \frac{x}{2}$ work = $\mathbf{E}(15 + 75) = \mathbf{E} 90$ On dividing by x, we get $x + \frac{1}{x} = \frac{1}{2}$ 360 \therefore Number of days he abstained = 90 15. (b) →X = 4 days<u>_ 30°</u> 18. (c) In crossing the bridge, the train travels its own 20 length plus the length of the bridge. Total distance (length) = 300 + 200 = 500 m. Speed = 25m/sec. Let AB the light-house with top A and AB \therefore The required time = 500 \div 25 = 20 seconds = 20 m19. (d) $\frac{(6.25)^{1/2} \times (0.0144)^{1/2} + 1}{(0.027)^{1/3} \times (81)^{1/4}}$ Also, C be the ship দিন গুরায়ের Given, angle of depression of ship from A =30° $= \frac{\left[\left(2.5\right)^{2}\right]^{1/2} \times \left[\left(0.12\right)^{2}\right]^{1/2} + 1}{\left[\left(0.3\right)^{3}\right]^{1/3} \times \left[\left(3\right)^{4}\right]^{1/4}}$ $\therefore \angle BAC = 60^\circ$ [since, L × AB = 90°] \therefore in $\triangle ABC$ $\tan 60^\circ = \frac{\text{Perpendicular}}{\text{Base}}$ $=\frac{\left(2.5\right)^{2\times\frac{1}{2}}\times\left(0.12\right)^{2\times\frac{1}{2}}+1}{\left(0.3\right)^{3\times\frac{1}{3}}\times\left(3\right)^{4\times\frac{1}{4}}}$ $\sqrt{3} = \frac{BC}{AB}$ দিন গুৰাটে $= \frac{2.5 \times 0.12 + 1}{0.3 \times 3} = \frac{0.3 + 1}{0.9}$ $\sqrt{3} = \frac{BC}{20}$ \Rightarrow BC = $20\sqrt{3}$ m



Hence, C is the mother of A or Z is the mother Q. Hence, Z is the maternal grandmother of A. P is the son of Z. Hence, P is the maternal uncle of A.

- 26. (d) Since we have to find out statements which CANNOT be true (but can be false) and hence 1 and 4.
- 27. (a) The concept is same as the previous question and we have to focus on statements which cannot be true. Here, 1 and 3 together cannot be true.







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37. (c) The given number series is based on the following pattern : 3 + 7 = 10; 10 + 10 = 20MITTIFE LE IRA

20 + 13 = 33; 33 + 16 = 49

49 + 19 = 68; 68 + 22 = 90

38. (b) Here the respective difference between the terms is as follows-2, 4, 6, 8,

Therefore, 12 + 8 = 20

which is the required term.

39. (b) 2 + 5 = 7 $7 + (5 \times 4) = 27$ $27 + (20 \times 4) = 107$ $107 + (80 \times 4) = 427$

40. (a)
$$b \xrightarrow{+1} c \xrightarrow{+1} d \xrightarrow{+1} e^{-\frac{+1}{2}} f$$

 $3 \xrightarrow{\times 2} 6 \xrightarrow{\times 2} 12 \xrightarrow{\times 2} 24 \xrightarrow{\times 2} 48$
 $P \xrightarrow{+2} R \xrightarrow{+2} T \xrightarrow{+2} V \xrightarrow{+2} X$ SUFFER

SESSION-II

Part-I : General Awareness

(a) The Arab conquest of Sindh by Muhammad Bin 1. Qasim in 712 AD gave the Muslims a firm foothold on the sub-continent. Qasim's conquest of Sindh and Punjab laid the foundations of Islamic rule in the Indian subcontinent. The description of Hiuen Tsang, a Chinese historian, leaves no doubt that the social and economic restrictions inherent in the caste differentiations of Hindu society had however, gradually sapped the inner vitality of the social system and Sindh fell without much resistance before the Muslim দ্য গুৰায়ে armies

- 2. (d) The festivals of Tamil Nadu are : Pongal, Jallikattu, Chithirai and Adipperukku.
 - (c) Benegal Narsing Rau was an Indian bureaucrat, jurist, diplomat and statesman known for his key role in drafting the Constitution of India. He was also India's representative to the United Nations Security Council from 1950 to 1952. B.N. Rau was appointed as the Constitutional Adviser to the Constituent Assembly in formulating the Indian Constitution. He was responsible for the general structure of the its democratic framework of the Consti-tution and prepared its original draft. The President of the Constituent Assembly Dr. Rajendra Prasad, before signing the Constitution on 26 November, 1949, thanked Rau for having 'worked honorarily all the time that he was here, assisting the assembly not only with his know-ledge and erudition but also enabled the other members to perform their duties with thoroughness and intelligence by supplying them with the material on which they could work.'
- 4. (b) Mercury is the innermost planet (nearest to the Sun) in the Solar System. It is also the smallest, and its orbit is the most eccentric (that is, the least perfectly circular) of the eight planets. It orbits the Sun once in about 88 Earth days, completing three rotations about its axis for every গ্যাচিভাৰ্ম two orbits.
- (c) An open market operation (also known as OMO) 5. is an activity by a central bank to buy or sell government bonds on the open market. A central bank uses them as the primary means of implementing monetary policy. The usual aim of open market operations is to control the short term interest rate and the supply of base money in an economy, and thus indirectly control the total money supply. This involves meeting the demand of base money at the target interest rate by buying and selling government securities, or other financial instruments. Monetary targets, such as inflation, interest rates, or exchange rates, are used to guide this implementation.
- (a) Pallavas ruled regions of northern Tamil Nadu 6. and southern Andhra Pradesh between the second to the ninth century CE. Kanchipuram served as the capital city of the Pallava Kingdom from the 4th to the 9th century. It is also known by

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its former names Kanchiampathi, Conjeevaram, and the nickname "The City of Thousand Temples'. Kanchipuram was mentioned in the Mahabhasya, written by Patanjali in the 2nd century BC.

- (d) On the 14 August, 1947 meeting of the Assembly, a proposal for forming various committees was presented. Such committees included a Committee on Fundamental Rights, the Union Powers Committee and Union Constitution Committee. On 29 August, 1947, the Drafting Committee was appointed, with Dr B. R. Ambedkar as the Chairman along with six other members assisted by a constitutional advisor.
- 8. (a) A hanging valley is a tributary valley with the floor at a higher relief than the main channel into which it flows. They are most commonly associated with U-shaped valleys when a tributary glacier flows into a glacier of larger volume. The main glacier erodes a deep U-shaped valley with nearly vertical sides while the tributary glacier, with a smaller volume of ice, makes a shallower U-shaped valley. Since the surfaces of the glaciers were originally at the same elevation, the shallower valley ap-pears to be 'hanging'above the main valley. Since
- 9. (c) Kanishka worked for preaching of Buddhism. He spread Buddhism to China, Japan, Central Asia and Tibet; and convened the 4th Buddhist Council at Kundal-vana in Kashmir. Due to his works he is often called 'Second Asoka'.
- 10. (a) Curie, in physics, unit of activity of a quantity of a radioactive substance, named in honour of the French physicist Marie Curie. One curie (1 Ci) is equal to 3.7×10^{10} becquerel (Bq). Radioactivity refers to the particles which are emitted from nuclei as a result of nuclear instability. Because the nucleus experiences the intense conflict between the two strongest forces in nature, it should not be surprising that there are many nuclear isotopes which are unstable and emit some kind of radiation. The most common types of radiation are called alpha, beta, and gamma radiation, but there are several other varieties of radioactive decay.
- 11. (b) Literally, Certiorari means to be certified. The writ of certiorari can be issued by the Supreme Court or any High Court for quashing the order already passed by an inferior court, tribunal or quasi judicial authority. A writ of certiorari is a form of judicial review whereby a court is asked

to consider a legal decision of an administrative tribunal, judicial office or organization (eg. government) and to decide if the decision has been regular and complete, if there has been an error of law, if the tribunal had the power to make the decision complained of or whether the tribunal exceeded its powers in issuing the decision complained of.

- (b) The Mariana Trench is the deepest part of the world's oceans. It is located in the western Pacific Ocean, to the east of the Mariana Islands.
- 13. (a) Galvanization is the process of applying a protective zinc coating to steel or iron, in order to prevent rusting. The term is derived from the name of Italian scientist Luigi Galvani. Although galvanization can be done with electrochemical and electro-deposition processes, the most common method in current use is hot-dip galvanization, in which steel parts are submerged in a bath of molten zinc.
- 14. (c) The Securities and Exchange Board of India (frequently abbreviated SEBI) is the regulator for the securities market in India. SEBI has to be responsive to the needs of three groups. which constitute the market: the issuers of securities; the investors; and the market intermediaries. It is entrusted with regulating the business in stock exchanges and any other securities markets; registering and regulating the working of stock brokers, sub-brokers, share transfer agents, bankers to an issue, trustees of trust deeds, registrars to an issue, merchant bankers, underwriters, portfolio managers, investment advisers and such other intermediaries who may be associated with securities markets in any manner; regis-tering and regulating the working of [venture capital funds and collective investment schemes], including mutual funds; etc. ন্দাগুৰাটে
- 15. (d) Water is transported through the plant in Xylem vessels, these begin in the roots and end in the leaves of the plant, water is translocated through a combination of "Transpirational pull" and capillary action. Xylem is one of two "conductive" tissues responsible for moving water and the products of photosynthesis (glucose) through the plant, the tissue responsible for moving the "food" around is Phloem.
- 16. (c) The All-India Muslim League was a political party during the period of the British Rule which advocated the creation of a separate Muslim-ma-

jority nation. It was founded by the All India Muhammadan Educational Conference at Dhaka (now Bangladesh), in 1906, in the context of the circumstances that were generated over the partition of Bengal in 1905.

- 17. (a) Kalamkari is a type of hand-painted or blockprinted cotton textile, produced in parts of South India and Iran. It is an ancient style of hand painting done on cotton or silk fabric with a tamarind pen, using natural vegetable dyes. This style of painting originated at Kalahasti near Chennai and at Masulipatnam near Hyderabad.
- 18. (a) Diabetes mellitus, or simply diabetes, is a group of metabolic diseases in which a person has high blood sugar, either because the pancreas does not produce enough insulin, or because cells do not respond to the insulin that is produced. This high blood sugar produces the classical symptoms of polyuria (frequent urination), polydipsia (increased thirst) and polyphagia (increased hunger).
- (b) Former India footballer Shyamal Ghosh, who also played for the big clubs of Kolkata football, passed away.
- 20. (a) The Malwa Plateau roughly forms a triangle based on the Vindhyan Hills, bounded by the Aravalli Range in the west and Madhya Bharat Pathar to the north and Bundelkhand to the east. It has two systems of drainage; one towards the Arabian sea (The Narmada, the Tapi and the Mahi), and the other towards the Bay of Bengal (Chambal and Betwa, joining the Yamuna).
- 21. (c) The concept of Directive Principles of State Policy was borrowed from the Irish Constitution. Article 45 of the Irish Constitution outlines a number of broad principles of social and economic policy. Its provisions are, however, intended solely "for the general guidance of the Oireachtas", and "shall not be cognizable by any Court under any of the provisions of this Constitution."
- 22. (b) Argentina's Lionel Messi creates record as the professional football player with the most appearances in FIFA World Cup.
 Messi has appeared in 26 matches across all FIFA Men's World Cups since 1930. The record was earlier held by Lothar Matthaus. Miroslav Klose appeared in 24 matches, followed by Paolo Maldini and Cristiano

Ronaldo. Earlier, Messi held the record for being the youngest player to score and assist in the same game in the tournament.

- 23. (a) On 25th December 2022, Bidhya Devi Bhandari, President of Nepal, appointed 68year-old Pushpa Kamal Dahal, Chairman of the Communist Party of Nepal as new Prime Minister of Nepal. He was sworn in for the 3rd time as the PM of Nepal succeeding Sher Bahadur Deuba of the Nepali Congress party.
- 24. (c) Luka Modric led Croatia to third place, after beating Morocco 2-1 in the FIFA World Cup 2022. Mislav Orsic scored the decisive goal shortly before halftime. It is the second time Croatia has taken third place since the team achieved the feat in its first World Cup as an independent nation 1998. Morocco became the first African team to reach the World Cup semi-finals.
 25. (1) Sect a based D are believed as a first or the second based of the second based of
- 25. (b) Sports brand Puma India announced Bollywood Actress and entrepreneur Anushka Sharma as its new Brand Ambassador, part of its ongoing commitment towards the women's business in India. i. Anushka Sharma will participate in a variety of brand campaigns and activities to promote the brand's footwear, clothes, and accessories, including a few collections throughout the year. ii. Anushka Sharma is a well-known brand ambassador for several companies, such as TVS Scooty, Nivea, Elle 18 cosmetics, Bru coffee, and Pantene.

Part-II গ্যাচিভার্স

English Language & Comprehension

- 26. (d) No error
- 27. (c) Use of of with despite is superfluous.So, despite himself will replace despite of himself
- 28. (c) most will replace more because the (Def. Art.) is used with Superlative Degrees, which compare more than two things/persons/situations. Hence, the most good-looking one is the right usage
- 29. (b) accused (Verb) : said that somebody has done something wrong, condemned (Verb) : expressed/very strong disapproval of, charged (Verb) : accused of doing something wrong (publicly)
 Here, accused is the right usage.
- 30. (c) which (Pro.) : used in questions for asking

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		somebody to be exact about one or more people		• I have to work at two jobs to make both ends
		or things from a limited number		meet.
		Here, which is the right usage.		The best option is to live within one's income.
31.	(b)	conscientious (Adj.) : taking care to do things	39. (c)	a close shave : a narrow escape • The car
		carefully and correctly		passed so close to us; it was really a close shave.
		Here, conscientious is the right usage.		The best option is a narrow escape.
32.	(c)	atone (Verb) : to act in a way that shows you	40. (c)	bad blood : feelings of hatred/strong dislike
		are sorry for doing something wrong in the		• There is no bad blood between us.
		past.at one takes the Preposition-for		The best option is active enmity. গ্র্যাচিত্রি
		Here, for is the right usage.	41. (d)	bliss (Noun) : extreme happiness
33.	(d)	The structure of the sentence is as follows:		misery (Noun) : distress ; poverty; great suffe-
		Past Perfect (Had — told),		ring of the mind or body ; very poor living
		would have + Past Participle		conditions
		(attended) Here, would have attended is the right usage.		glad (Adjective) : pleased ; happy ; grateful ;
31	(d)	strengthen (Verb) : to become stronger; to		very willing to do ; full of joy ; bringing joy
54.	(u)	make somebody or something stronger		pleasant (Adjective) : enjoyable, pleasing or
		fortify (Verb) : to make a place more able to		attractive ; friendly and polite
		resist attack; to make yourself feel stronger,		enjoy (Verb) : to get pleasure ; to be happy and
		braver; strengthen		get pleasure from what you are doing
		create (Verb) : to make something happen or	42. (c)	civilized (Adjective) : having or showing polite
		exist; to produce a particular feeling		and reasonable behaviour
		generate (Verb) : to produce or create		barbarous (Adjective) : extremely cruel and
		something		shocking ; showing a lack of education and good
		<pre>prohibit (Verb) : to stop something from being</pre>		manners
		done; forbid গ্র্যাচিত্রাস		improved (Verb) : to become/ make better than
35.	(b)	shortage (Noun) : a situation when there is not		before
		enough of the people or things that are needed		cordial (Adjective) : pleasant and friendly
		paucity (Noun) : a small amount of something;		modified (Adjective) : changed in form or
		less than enough of something; shortage surplus (Noun) : an amount that is extra or		character
		more than you need	43. (b)	lazy (Adjective) : lethargic
		excess (Noun) : more than is necessary,		diligent (Adjective) : showing care and effort
		reasonable or acceptable		in your work or duties
		meanness (Noun) : the quality of being mean;		intelligent (Adjective) : very clever
		unwilling to part with anything; likely to become		boastful (Adjective) : talking about yourself in
		angry		a very proud way
36.	(b)	violence (Noun) : violent behaviour that is		notorious (Adjective) : well- known for being
		intended to hurt or kill somebody	4.4 (1)	bad
		atrocity (Noun) : a cruel and violent act	44. (d)	barometer barometer (N.) : an instrument for
		envy (Noun) : jealousy গ্র্যাচিও স		measuring air pressure to show when the weather will change metronome (N.) : a device
		jealousy (Noun) : envy; a feeling of being jealous		that makes a regular sound like a clock and is
		absurdity (Noun) : the state of being completely		used by musicians for helping them keep the
		ridiculous; illogical or insensible		correct rhythm while playing a piece of music.
37.				
	(d)	run down : to criticize somebody/something in		
	(d)	run down : to criticize somebody/something in an unkind way		compass (N.) : an instru-ment for finding
	(d)	an unkind wayPlease stop running me down all the time. The		
		an unkind wayPlease stop running me down all the time. The best option is criticise.	45. (d)	compass (N.) : an instru-ment for finding directions pedometer (N.) : an instrument for
38.		an unkind wayPlease stop running me down all the time. The	45. (d)	compass $(N.)$: an instru-ment for finding directions pedometer $(N.)$: an instrument for measuring how far you have walked

the same way but having different meanings **pseudonym (N.)**: a fictitious name used instead of his real names

antonyms (N.) : words of opposite meanings 46. (d) to (Prep.)

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- 47. (a) nestles (Verb) : located in a position that is protected, sheltered or hidden
- 48. (a) so (Conj.)
- 49. (b) take (Verb)
- 50. (d) bordering (Verb)

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