

**SELECTION FOR THE POST OF SM/GOODS GUARD CATEGORIES (GRADUATE LEVEL)
AGAINST COMPASSIONATE GROUNDS APPOINTMENT
WRITTEN EXAMINATION**

DATE : 10.05.2019

VENUE : MDZTI/Tiruchchirappalli

TIME : 14:00 hrs. to 16:00 hrs.

TOTAL MARKS : 100

1. Candidates should write their Name, Roll Number etc., only in the space provided in the fly leaf and **NOT** in any other sheet.
2. The Question paper contains 100 questions:
Part I - 35 questions - General Knowledge
Part II - 25 questions - General English
Part III - 40 questions - Arithmetic
3. All questions are compulsory.
4. Each question carries 1 mark.
5. There shall be **no negative marks** for wrong answers.
6. No corrections / over-writings are permitted. If found, the same will not be evaluated.

PART I – GENERAL KNOWLEDGE

1. Earthquake tremors are caused by the disturbance deep down inside the uppermost layer of the earth called the _____.
1) core
2) kernel
3) pith
4) crust
2. Economic growth is usually coupled with _____.
1) deflation
2) inflation
3) Stagflation
4) hyper inflation
3. Which of the following is NOT an allotrope of carbon?
1) Diamond
2) Graphite
3) C-60
4) Methane
4. Diabetes is caused by
1) Excess of insulin
2) Low production of Insulin
3) Malfunction of liver
4) Higher production of bilirubin
5. What is baking soda?
1) Aluminium bicarbonate
2) Sodium isolate
3) Sodium bicarbonate
4) Aluminium sulphate

6. Who was the founder of the Brahmo Samaj, founded in 1828?
 - 1) Rabindranath Tagore
 - 2) Subhash Chandra Bose
 - 3) Sardar Vallabh Bhai Patel
 - 4) Raja Ram Mohan Roy
7. Which among the following elements is a liquid at room temperature?
 - 1) Phosphorus
 - 2) Mercury
 - 3) Sodium
 - 4) Aluminium
8. How many maximum terms, a person can serve as Prime Minister of India?
 - 1) 3
 - 2) 5
 - 3) 7
 - 4) No limit
9. Which of the following is not an Operating System?
 - 1) Windows Vista
 - 2) Linux
 - 3) Microsoft Office
 - 4) Apple's Mac OS
10. Web pages are created by using which of the following?
 - 1) HTTP
 - 2) SMTP
 - 3) HTML
 - 4) SGML
11. Release of which among the following is the primary reason for depletion of the ozone layer?
 - 1) Nitrous oxide
 - 2) Hydrogen dioxide
 - 3) Chlorofluro carbon
 - 4) Carbon monoxide
12. Who generally presents the Finance Budget in Indian Parliament?
 - 1) RBI Governor
 - 2) Budget Minister
 - 3) Finance Minister
 - 4) Finance Secretary
13. The process of producing energy in plants is known as
 - 1) Absorption
 - 2) Reduction
 - 3) Photosynthesis
 - 4) Transpiration
14. Name the catalyst used in the conversion of milk into curd.
 - 1) Pepsin
 - 2) Invertase
 - 3) Lactase
 - 4) Diastase

15. The study of universe is known as _____
1) Cosmology
2) Astrology
3) Seismology
4) Limnology
16. Rodentia Sciurus is the scientific name of
1) Rat
2) Platypus
3) Squirrel
4) Beaver
17. Which of the following language is used to access data from a database?
1) ASP.Net
2) Java
3) SQL
4) C++
18. Who discovered theory of relativity?
1) Isaac Newton
2) Albert Einstein
3) Niel Bohr
4) Michael Faraday
19. Highest Civilian Honour received by A. P. J. Abdul Kalam is
1) Padma Shri
2) Padma Bhushan
3) Padma Vibhushan
4) Bharat Ratna
20. Medulla oblongata is a part of which of the following?
1) Heart
2) Brain
3) Lungs
4) Stomach
21. Mangifera indica is the scientific name of
1) Guava
2) Mango
3) Amla
4) Jack fruit
22. Why metals conduct electricity?
1) Because of low melting point
2) Because of high tensile strength
3) Because of free electrons
4) Because of high atomic density
23. How many schedules does the Indian Constitution have?
1) 6
2) 12
3) 18
4) 24

24. The outermost layer of skin is
1) Epidermis
2) Dermis
3) Tissues
4) Hypodermis
25. Ilaiyaraja composed symphony for the following literature classic:
1) Dhivya Prabandham
2) Thirukkural
3) Thiruvagasam
4) None of the above

TRUE OR FALSE

26. The Lok Sabha Election 2019 in Tamil Nadu was held on 20th April 2019.
27. Gomathi Marimuthu of Tamil Nadu is an international Tennis Champion.
28. Suresh Raina is the captain of Chennai Super Kings in the current IPL Season.
29. The name of political party founded by Rajinikanth is 'Makkal Needhi Maiam'.
30. The term 'TTE' in Railways stands for Travelling Ticket Examiner.

ABBREVIATIONS

31. AIIMS
a. All India Institute of Medical Sciences
b. All India Information Management System
c. All India Institute of Management Sciences
d. None of the above
32. KRCL
a. Kerala Rail Corporation Limited
b. Konkan Railway Corporation Limited
c. Karnataka Railways Company Limited
d. None of the above
33. HAL
a. Hindustan Aeronautics Limited
b. Hindustan Automobiles Limited
c. Hindustan Airways Limited
d. None of the above
34. BSF
a. Bharat Security Force
b. Bharat Safety Fund
c. Border Security Force
d. Border Safety Front
35. CBI
a. Central Board of Information
b. Central Board of Investigation
c. Central Bureau of Investigation
d. Central Branch of Information

PART II – GENERAL ENGLISH

1. In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

My first (1)/ task has (2)/ to go for shopping. (3)/ No error (4)

- 1) 1
- 2) 2
- 3) 3
- 4) 4

2. In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

In 2003, Delhi won the first 'Clean Cities International (1)/ Partner of the Year' award at its "bold efforts to curb (2)/ air pollution and support alternative fuel initiatives". (3) /(4)

- 1) 1
- 2) 2
- 3) 3
- 4) 4

3. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

_____ is not well with her.

- 1) This
- 2) Always
- 3) It
- 4) All

4. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

A youth is _____ who is not a child anymore and is yet to enter adulthood.

- 1) someone
- 2) no one
- 3) anyone
- 4) every

5. In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

It was like(A)/reading a(B)/open book. (C)/No error(D)

- 1) A
- 2) B
- 3) C
- 4) D

6. Improve the bracketed part of the sentence.

Everyday we (have usually) dinner at 8 o'clock.

- 1) usually have
- 2) have usual
- 3) have had usually
- 4) no improvement

7. Improve the bracketed part of the sentence.

(It is) a pleasant day, we went for a walk.

Options:

- 1) Having been
- 2) It being
- 3) It was
- 4) no improvement

8. Improve the bracketed part of the sentence.

Human beings are social animals, (who are living in communities), regulated by social norms and laws.

- 1) living in communities
- 2) living amongst a community
- 3) living in midst of communities
- 4) no improvement

9. Improve the bracketed part of the sentence.

(I myself think) that this investigation is biased.

- 1) I think myself
- 2) I thought myself
- 3) I myself thought
- 4) no improvement

10. Improve the bracketed part of the sentence.

Hardly had she finished her dinner (then) the doorbell rang.

- 1) than
- 2) when
- 3) while
- 4) no improvement

11. Select the antonym of 'Obligation'

- 1) bond
- 2) burden
- 3) commitment
- 4) irresponsibility

12. Select the synonym of 'Proximity'

- 1) futile
- 2) preposterous
- 3) absurd
- 4) imminent

13. Select the synonym of 'Astonish'

- 1) mundane
- 2) empress
- 3) overwhelm
- 4) calm

14. Select the word with the correct spelling.
- 1) arobics
 - 2) chosers
 - 3) bated
 - 4) eternity
15. Select the word with the correct spelling.
- 1) comando
 - 2) coolants
 - 3) limphoid
 - 4) permuted
16. Select the word with the correct spelling.
- 1) humable
 - 2) customer
 - 3) breches
 - 4) boufant
17. Select the synonym of 'Ancient'
- 1) topical
 - 2) extant
 - 3) archaic
 - 4) fad
18. Select the synonym of 'Inscription'
- 1) scrubbed
 - 2) rivet
 - 3) jaded
 - 4) engrave
19. Select the synonym of 'Consolidate'
- 1) centralize
 - 2) variate
 - 3) declare
 - 4) announce
20. Select the word with 'incorrect' spelling
- 1) Comission
 - 2) Omission
 - 3) Emission
 - 4) Submission
21. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.
- I never go shopping on weekends as on those days the malls areof people.
- 1) full
 - 2) busy
 - 3) crowded
 - 4) packed

22. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

Thewith which she manages the task is remarkable.

- 1) calm
- 2) comfort
- 3) ease
- 4) satisfaction

23. In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one, which best expresses the same sentence in Passive/ Active voice.

We have finished the assignment.

- 1) The assignment has been finished by us.
- 2) The assignment were finished by us.
- 3) The assignment had been finished by us.
- 4) The assignment has had been finished by us.

24. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

'Good Samaritan'

- 1) a very rich but humble person
- 2) a person who helps others but with a hidden cause
- 3) a charitable or helpful person
- 4) a person who accepts defeat sportingly

25. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

'Add fuel to the fire'

- 1) Go from one bad situation to another
- 2) The flame will extinguish if it runs out of oil
- 3) Adding water to stop fire
- 4) Cause a situation to become worse

PART III - ARITHMETIC

1. In ΔABC , D and E are points on side AB and AC respectively. DE is parallel to BC. If lengths of AD, DB and DE are 10 cm, 5 cm and 6 cm respectively. What is the length of BC?

- 1) 9 cm
- 2) 2 cm
- 3) 3 cm
- 4) 11 cm

2. The sum of all prime numbers between 30 and 42 is

- 1) 103
- 2) 109
- 3) 105
- 4) 104

3. The curved surface area of a hemisphere is 2772 sq cm and volume is 19404 cubic cm, what is its radius? (Take $\pi = 22/7$)

Options:

- 1) 42 cms
- 2) 21 cms
- 3) 10.5 cms
- 4) 31.5 cms

4. The value of 'x' for which the expressions $12 - 6x$ and $4x + 2$ become equal is

- 1) 0
- 2) 2
- 3) 1
- 4) 4

5. To travel 816 km, an Express train takes 9 hours more than Rajdhani. If however, the speed of the Express train is doubled, it takes 4 hours less than Rajdhani. What is the speed of Rajdhani?

- 1) 48 km/hr
- 2) 62.8 km/hr
- 3) 33.2 km/hr
- 4) 77.5 km/hr

6. To cover a distance of 216 km in 3.2 hours, what should be the average speed of the car in meters/second?

- 1) 67.5 m/s
- 2) 33.75 m/s
- 3) 37.5 m/s
- 4) 18.75 m/s

7. In the first 26 overs of a cricket match, the run rate was 5.4 runs/over. What is the required run rate in the remaining 24 overs to reach the target of 294 runs?

Options:

- 1) 7
- 2) 6.4
- 3) 7.6
- 4) 5.8

8. Select the related number from the given alternatives.

$16 : 40 :: 20 : ?$

- 1) 29
- 2) 21
- 3) 50
- 4) 60

9. Find out the odd number pair from the given alternatives.

- 1) 78, 26
- 2) 19, 20
- 3) 20, 40
- 4) 36, 12

10. If $\tan 45^\circ + \operatorname{cosec} 30^\circ = x$, then find the value of x.

- 1) $\sqrt{3}$
- 2) $(1-2\sqrt{2})\sqrt{2}$
- 3) $(\sqrt{3}-4)2\sqrt{3}$
- 4) 3

11. P and Q can do a project in 150 and 100 days respectively. In how many days can they complete 60% of the project if they work together?
- 1) 12 days
 - 2) 72 days
 - 3) 42 days
 - 4) 36 days
12. The length of the diagonal of a rectangle is 26 cm and that of one side is 10 cm. What is the area of this rectangle?
- 1) 260 sq cm
 - 2) 120 sq cm
 - 3) 130 sq cm
 - 4) 240 sq cm
13. What smallest number should be added to 2401 so that the sum is completely divisible by 14?
- 1) 8
 - 2) 7
 - 3) 4
 - 4) 5
14. Curved surface area of a cylinder is 440 sq cm. If circumference of its base is 44 cm, what is the volume of the cylinder? (Take $\pi = 22/7$)
- 1) 1540 cubic cm
 - 2) 3080 cubic cm
 - 3) 770 cubic cm
 - 4) 2310 cubic cm
15. The average revenues of 13 consecutive years of a company is Rs 82 lakhs. If the average of first 7 years is Rs 77 lakhs and that of last 7 years is Rs 89 lakhs, find the revenue for the 7th year.
- 1) Rs 98 lakhs
 - 2) Rs 94 lakhs
 - 3) Rs 96 lakhs
 - 4) Rs 92 lakhs
16. An engineering student has to secure 36% marks to pass. He gets 53 and fails by 37 marks. Find the maximum marks.
- 1) 275 marks
 - 2) 250 marks
 - 3) 300 marks
 - 4) 325 marks
17. If $x + y = 12$ and $xy = 32$, then what is the value of $x^2 + y^2$
- 1) 24
 - 2) 144
 - 3) 128
 - 4) 80
18. What is the length of the arc whose central angle is 30° and radius of the circle is 21 cm?
- 1) 22 cm
 - 2) 16.5 cm
 - 3) 28.5 cm
 - 4) 11 cm

19. A solid copper sphere of radius 9 cm is melted and reformed into a wire of radius 1 mm. What will be the length of this wire? (Take $\pi = 22/7$)
- 1) 1166.4 metres
 - 2) 1458 metres
 - 3) 777.6 metres
 - 4) 972 metres
20. The sum of a non-zero number and its reciprocal is 2. What is the number?
- 1) 1
 - 2) 2
 - 3) 0
 - 4) 4
21. 25% discount is offered on an item. By applying a promo code, the customer wins 8% cash back. What is the effective discount?
- 1) 35.75 percent
 - 2) 35 percent
 - 3) 31 percent
 - 4) 12.5 percent
22. Prabhat has done $1/2$ of a job in 12 days. Santosh completes the rest of the job in 6 days. In how many days can they together do the job?
- 1) 12 days
 - 2) 4 days
 - 3) 8 days
 - 4) 16 days
23. Ruchir walks at 20 km/hr and Rukma cycles at 25 km/hr towards each other. What was the distance between them when they started if they meet after 48 minutes?
- 1) 54 km
 - 2) 45 km
 - 3) 36 km
 - 4) 27 km
24. If $4/5$ th of $6/7$ th of a number is 216, then $8/9$ th of that number will be
- 1) 179
 - 2) 280
 - 3) 160
 - 4) 269
25. Product of digits of a 2-digit number is 18. If we add 63 to the number, the new number obtained is a number formed by interchange of the digits. Find the number.
- 1) 92
 - 2) 29
 - 3) 36
 - 4) 63
26. The average weight of Somdev, Gurdeep and Ritu is 85 kg. If the average weight of Somdev and Gurdeep be 79 kg and that of Gurdeep and Ritu be 73 kg, then the weight of Gurdeep is
- 1) 78
 - 2) 49
 - 3) 72
 - 4) 90

27. Find the radius of the circle if the length of its arc is 33 cm whose corresponding central angle is 60°

- 1) 21 cm
- 2) 14 cm
- 3) 7 cm
- 4) 28 cm

28. A cylindrical vessel of radius 6 cm is partially filled with water. By how much will the water level rise if a sphere of radius 5 cm is completely immersed in this water? (Take $\pi = 22/7$)

- 1) 6.67 cm
- 2) 5.5 cm
- 3) 3.34 cm
- 4) 4.4 cm

29. The total surface area of a hemisphere is 1848 sq cm, what is its radius? (Take $\pi = 22/7$)

- 1) 28 cms
- 2) 7 cms
- 3) 21 cms
- 4) 14 cms

30. The sum of the ages of Anuj and his mother is 32, and his father's age is 38 years. If his father is 8 years older to his mother, what is the age (in years) of Anuj?

- 1) 4
- 2) 2
- 3) 1
- 4) 5

31. If $xy = 56$ and $x^2 + y^2 = 113$, then what will be the value of $(x + y)$?

- 1) 29
- 2) 21
- 3) 36
- 4) 15

32. In a triangle the length of the side opposite the right angle is 6 cm, what is the length of the side opposite to the angle which measures 30° ?

- 1) 3 cm
- 2) $3\sqrt{3}$ cm
- 3) $3/2$ cm
- 4) $(3/2)\sqrt{3}$ cm

33. A missile travels at 1440 km/h. How many metres does it travel in one second?

- 1) 374 metres
- 2) 385 metres
- 3) 394 metres
- 4) 400 metres

34. 'A' travels 12 km towards north and then takes a left turn and covers another 5 km. From there, he turns 180° anticlockwise and travels 10 km further. What is the minimum distance between his initial and final position?

- 1) 8 km
- 2) 13 km
- 3) 6 km
- 4) 12 km

35. 26 is 0.4% of which number?

- 1) 6500
- 2) 650
- 3) 13000
- 4) 16250

36. Divide 20 into two parts such that the sum of the square of the parts is 232. What is the value of the two parts?

- 1) 6, 14
- 2) 8, 12
- 3) 4, 16
- 4) 10, 10

37. A painter can paint a fence in 24 hours. After 6 hours he takes a break. What fraction of the fence is yet to be painted?

- 1) 0.6
- 2) 0.2
- 3) 0.75
- 4) 0.8

38. If 21% of an electricity bill is discounted, Rs 1817 is still to be paid. How much was the original bill amount?

- 1) Rs 1502
- 2) Rs 2336
- 3) Rs 2300
- 4) Rs 1538

39. The average temperature of a town in the first six days of a month was 410°C and the sum of the temperatures of the first five days of the same month was 2010°C . What was the temperature on the sixth day of the month?

- 1) 400°C
- 2) 450°C
- 3) 460°C
- 4) 500°C

40. Divide 32 into two parts such that the sum of the square of the parts is 674. What is the value of the parts?

- 1) 22, 10
- 2) 30, 2
- 3) 25, 7
- 4) 20, 12