9ME1

Education Bure w Territory-wide System Assessment 2020 Second TG Mathematics narking Scheme

Gainful Use of TSA 2020 Materials

Section A – Sub-paper 1 (9ME1) (1 mark each)

| 1. | С | 2. | В | 3. | С | 4. | D | 5. | D |
|-----|---|-----|---|-----|---|-----|---|-----|---|
| 6. | А | 7. | D | 8. | В | 9. | С | 10. | D |
| 11. | С | 12. | В | 13. | В | 14. | А | 15. | А |
| 16. | А | 17. | С | 18. | А | 19. | В | 20. | D |
| 21. | В | 22. | В | 23. | D | 24. | В | 25. | В |
| 26. | А | 27. | А | 28. | С | 29. | А | 30. | D |

Section B - Sub-paper 1 (9ME1)

| Question Number | Suggested Answers | Marks | Notes |
|--------------------|---------------------------------------------------------------------------|-------|---------------------|
| 31. | A = -4 | | |
| | B = -1 | 1 | Must be all correct |
| | C = 4/+4 | | |
| 32. | Area = 3.71×10^{5} km ² | 1 | |
| 33. | There are 36 fiction book(s). | 1 | |
| 34. | m = 9 | 1 | |
| 35. | The value of the 5 th term of the sequence is $\frac{1}{20}$. | 1 | |
| 36. | x - 3y | 1 | |
| 37. | (y+3)(y-3) | 1 | |
| 38. | x = | 1 | |
| 39. | approximate solution | 1 | |

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| Question Number | Suggested Answers | Marks | Notes |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|
| 40. | x > -2 | 1 | |
| 41. | The order of rotational symmetry is <u>3</u> . | 1 | |
| 42. | (a) $x = 50$ (b) $y = 12$ | 1 | Must be all correct No need to consider unit |
| 43. | $x = 50^{\circ}$ | 1 | No need to consider unit |
| 44. | CD / DC | 1 | |
| 45. | Q and R | 1 | Must be all correct |
| 46. | The coordinates of point E' are $(\underline{1}, \underline{3})$. | 1 | Must be all correct |
| 47. | (i) Continuous data(ii) Discrete data | 1 | Must be all correct |
| 48. | (a) The value of x is <u>165</u>. (b) The total expenditure of the activity is <u>\$2160</u>. (c) The difference between the expenditure on food and the general expenses of the activity is \$150. | 1 (48a) 1 (48b) 1 (48c) | No need to consider unit |
| 49. | Mean = 15 $Median = 16$ | 1 (49-1) 1 (49-2) | |
| 50. | -1 | 1 | |
| 51. | 3 <i>n</i> | 1 | |
| 52. | The degree of the polynomial is | 1 | |
| 53. | 2x - xy | 1 | |
| 54. | (a-b)(x+3) | 1 | |
| 55. | b = 3a - 4 | 1 | |
| 56. | $x \ge 1$ | 1 | |
| 57. | The area of the circle is 49π cm ² . | 1 | |
| 58. | $\theta = 40.5^{\circ}$ | 1 | r.t. 40.5° No need to consider unit |

| Question Number | Suggested Answers | | | | | | | Notes |
|--------------------|------------------------------------------------------------------------|----------------------|-----------------------------|--------------------|---------------------------------------|---------|-------------------|--------------------------|
| 59. | $m = _135^{\circ}$ | | | | | | | No need to consider unit |
| 60. | The num | ber of ax | es of symm | 1 | | | | |
| 61. | <i>x</i> = <u>12</u> . | 2 | | 1 | r.t. 12.2 No need to consider unit | | | |
| 62. | The rece | ived inter | rest = \$ 4 | 896 | | | 1 | |
| 63. | The actu | al length | of the mode | el car is <u>8</u> | 4 cm. | | 1 | |
| 64. | x = 12 | 20 | | | | | 1 | No need to consider unit |
| 65. | <i>x</i> = <u>1</u> | | | | | | 1 (65-1) | |
| | <i>y</i> = <u>3</u> | | | | | | 1 (65-2) | |
| 66. | x = | 7.2 cm | 1 | | | | 1 | r.t. 27.2 |
| 67. | The volu | me of so | lid <i>B</i> is | | 1 | | | |
| 68. | The area | of the tri | iangle is | | 1 | | | |
| 69. | (a) | | | | | | | |
| | | | | Units digit | | | | |
| | | | 2 | _ | 0 | | | |
| | | | 2 | 7 | 8 | | | |
| | 2 22 27 Tens 7 72 77 | | 22 | 27 | 28 | | 1 (52.) | Must be all correct |
| | | | 77 | 78 | | 1 (09a) | Must be an concet | |
| | 8 | 8 | 82 | 87 | 88 | | | |
| | (b) The | probabil n number | tity that the $\frac{2}{3}$ | two-digit nu | | 1 (69b) | or 0.667 | |

Remark: r.t. xxx means "accept answers which can be rounded to xxx"

9ME2



Gainful Use of TSA 2020 Materials

Section A - Sub-paper 2 (9ME2) (1 mark each)

| 1. | С | 2. | D | 3. | А | 4. | С | 5. | В |
|-----|---|-----|---|-----|---|-----|---|-----|---|
| 6. | С | 7. | В | 8. | D | 9. | D | 10. | Α |
| 11. | А | 12. | С | 13. | D | 14. | В | 15. | D |
| 16. | D | 17. | С | 18. | А | 19. | С | 20. | А |
| 21. | С | 22. | А | 23. | С | 24. | С | 25. | D |
| 26. | В | 27. | В | 28. | С | 29. | А | | |

Section B - Sub-paper 2 (9ME2)

| Question Number | Suggested Answers | Marks | Notes |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|
| 30. | (i) <u>+6 / 6</u> square(s) represents that the red chequer jumps 6 squares forwards. (ii) <u>-1</u> square(s) represents that the green chequer jumps 1 square backwards. | 1 | Must be all correct |
| 31. | 0.04 | 1 | |
| 32. | $x^2 + 2x - 3$ | 1 | |
| 33. | $(2x+1)^2$ / $(2x+1)(2x+1)$ | 1 | |
| 34. | $\frac{x}{2}$ | 1 | |
| 35. | $-\frac{3}{10} > -\frac{5}{10}$ | 1 | |
| 36. | The volume of the sphere is 972π cm ³ . | 1 | |
| 37. | P and Q | 1 | Must be all correct |

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| Question Number | | Sugge | sted A | Marks | Notes | | |
|--------------------|-------------------------------------------|----------------------|---------------|-----------------|-------------------------------------------------|---------|--------------------------|
| 38. | (a) $m =(b) n =5$ | 7 2 | | 1 | Must be all correct No need to consider unit | | |
| 39. | $x = 22^{\circ}$ | | | 1 | No need to consider unit | | |
| 40. | The gradient | of the path | PQ is | $\frac{1}{3}$. | | 1 | Accept 0.333 or 1 : 3 |
| 41. | Tabl | le 1 | | Tab | le 2 | | |
| | Weights of | Frequency | | Weights of | Frequency | | |
| | students (kg) | | | students (kg) | | 1(41-1) | Must be all correct |
| | 40-49 | 6 | | 40-45 | 3 | | |
| | 50 - 59 | 5 | | 46 - 51 | 4 | 1(41-2) | Must be all correct |
| | 60 - 69 | 4 | | 52 - 57 | 4 | | |
| | | | | 58 - 63 | 2 | | |
| | | | | 64 - 69 | 2 | | |
| 42. | The modal c | lass of the | numbe | er of voluntee | ring hours is | 1 | Must be all correct |
| | <u>10</u> hour(s) - | – <u>19</u> hou | r(s). | | | 1 | |
| 43. | 70 700 | | | | | 1 | |
| 44. | $x = \underline{28}$ $y = \underline{36}$ | | | | | 1 | Must be all correct |
| 45. | $2x^3 - 2x$ | | | | | 1 | |
| 46. | (x+3)(x-2) | | | | | 1 | |
| 47. | $x^2 - 1$ | | | 1 | | | |
| 48. | <i>a</i> = <u>3</u> | | | 1 | | | |
| 49. | (a) $\triangle ABC \sim$ | $\triangle PQR$ | (b) AA | 1 | Must be all correct | | |
| 50. | $x = 48^{\circ}$ | | | 1 | No need to consider unit | | |
| 51. | $\angle CDE / \angle E$ | $EDC \mid \angle BA$ | $F/ \angle I$ | FAB | | 1 | |
| 52. | <i>x</i> = <u>130</u> | | | | | 1 | No need to consider unit |

| Question Number | Suggested Answers | Marks | Notes |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 53. | The coordinates of point T are $(1, -4)$. | 1 | Must be all correct |
| 54. | $AB = _13$ units | 1 | |
| 55. | $(4) \rightarrow (2) \rightarrow (1) \rightarrow (3)$ | 1 | Must be all correct |
| 56. | The weighted mean mark of Vincent is <u>67</u> . | 1 | |
| 57. | (a) Group A B C D E F Height (cm) 131–140 141–150 151–160 161–170 171–180 181–190 Frequency 1 8 11 14 11 5 | 1 (57a) | Must be all correct |
| | (b) <u>16</u> students can be basketball team members. | 1 (57b) 1 (58c) | |
| 58. | The required empirical probability = $\frac{31}{100}$ | 1 | or 0.31 |
| 59. | The marked price of the electrical fan is <u>1100</u> . | 1 | No need to consider unit |
| 60. | (a) x^2 (b) x^6 | 1(60a) 1(60b) | |
| 61. | The area of the sector is 78.2 cm ² . | 1 | r.t. 78.2 cm ² |
| 62. 63. | Studying times of 15 students in the last week Stem (10 hours) Leaf (1 hour) 1 2 3 5 8 2 0 3 4 5 3 2 3 4 5 4 1 4 6 5 0 5 1 It takes 5 years to receive the interest. | 1 | All correct (including correct data of the leave in each row, the distances between data, the order of the data and no commas between the data) |
| 64. | The annual income of the team this year is $\frac{851\ 690}{2}$. | 1 | |
| 65. | The volume of water is 80π cm ³ . | 1 | No need to consider unit |

| Question Number | | Sugges | sted Answe | Marks | Notes | | |
|--------------------|--------------------------------------------------------------|--------------------|------------|-------|-----------|---------------------|--|
| 66. | DC = 13 c | m | | 1 | | | |
| 67. | The distance bet | ween A ar | nd C is | 1 | r.t. 29.3 | | |
| 68. | (a) | | | | | | |
| | Time (hour) | 6-10 | 11 – 15 | 16-20 | 21 – 25 | | |
| | Class mark (hour) 8 13 18 23 | | | | 1(68a) | Must be all correct | |
| | Frequency | Frequency 6 7 13 4 | | | | | |
| | (b) The mean = | 15.5 | hours | · | | 1(68b) | |

Remark: r.t. *xxx* means "accept answers which can be rounded to *xxx*"