

SAMPLE PAPER GROUP EPSILON

MATHEMATICS SECTION

Q1. Solve quadratic: $x^2 - 5x + 6 = 0$.

- a) b)
c) d)

Q2. Plot $y = 2x + 3$ for $x = -2$ to 2 .

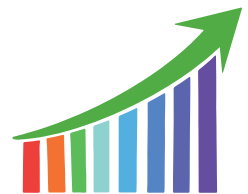
- a)  b) 

c)  d) 

Q3. Find mean of 5, 8, 10, 12, 15.

- a)  b) 

c)  d) 



Q4. If probability of rain is 0.3, what is probability of no rain?

- a) b)
c) d)

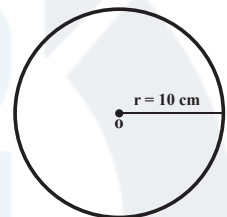
Q5. Expand: $(x + 2)(x - 3)$.

- a)  b) 

c)  d) 

Q6. Find circumference ($p=3.14$).

- a) b)
c) d)



Q7. If roots of $x^2 + px + 6 = 0$ are 2 and 3, find p.

- a) b)
c) d)

Q8. Simplify: $(\frac{3}{4} \div \frac{2}{5})$.

- a) b)
c) d)

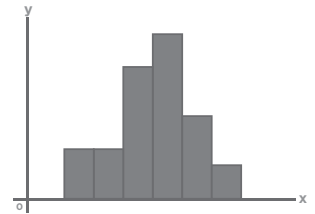
Q9. Which interval has mode?

a)

b)

c)

d)



Q10. Solve: $2x - 7 = 15$.

a)

b)

c)

d)

Q11. Find slope of line passing through (2,3) and (6,7).

a)

b)

c)

d)

Q12. Evaluate: $(5^3 \times 5^2) / 5n$.

a)

b)

c)

d)

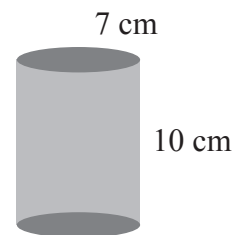
Q13. Find volume.

a)

b)

c)

d)



Q14. A car travels 240 km in 4 hrs. Find average speed.

a)

b)

c)

d)

Q15. Median of 2,4,6,8,10,12,14?

a)

b)

c)

d)

Q16. Factorize: $x^2 - 9$.

a)

b)

c)

d)

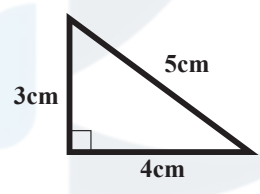
Q17. Verify Pythagoras theorem.

a)

b)

c)

d)



Q18. If 30% of a number is 45, find number.

a)

b)

c)

d)

Q19. Solve inequality: $2x + 3 < 11$.

a)

b)

c)

d)

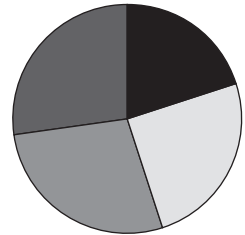
Q20. Which slice is 72° out of 360° ?

a)

b)

c)

d)



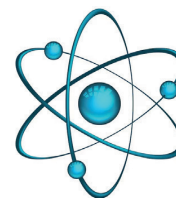
SCIENCE SECTION

Q21. State Ohm's law.

- a) b)
- c) d)

Q22. Identify electrons, protons, neutrons.

- a) b)
- c) d)



Q23. Define valency with example.

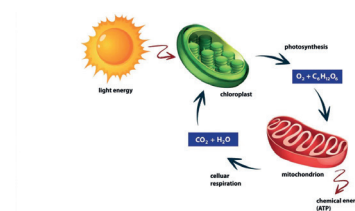
- a) b)
- c) d)

Q24. Which organelle controls cell activities?

- a) b)
- c) d)

Q25. Write balanced equation for respiration.

- a) b)
- c) d)



Q26. What is acceleration due to gravity on Earth?

- a) b)
- c) d)

Q27. Explain refraction with example.

- a) b)
- c) d)

Q28. What is DNA function?

- a) b)
- c) d)



Q29. Which acid is found in lemon juice?

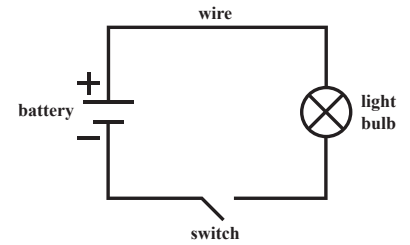
- a) b)
- c) d)

Q30. Define isotopes with example.

- a) b)
- c) d)

Q31. What happens when resistors are in parallel?

- a) b)
- c) d)



Q32. Which blood group is universal donor?

- a) b)
- c) d)

Q33. Define ecosystem with example.

- a) b)
- c) d)

Q34. Which lens is used in magnifying glass?

- a) b)
- c) d)



Q35. State law of conservation of mass.

- a) b)
- c) d)

Q36. Which hormone regulates blood sugar?

- a) b)
- c) d)

Q37. Which planet has maximum moons?

- a) b)
- c) d)



Q38. Why does rusting increase in salty water?

- a) b)
- c) d)

Q39. Define nuclear fission.

- a) b)
- c) d)

Q40. Which vitamin deficiency causes rickets?

- a) b)
- c) d)

ENGLISH SECTION

Q41. Read passage 'The Last Leaf'. What message does it give?

- a) b)
- c) d)

Q42. Which is synonym of 'benevolent'?

- a) b)
- c) d)

Q43. Correct tense: She ____ her homework already. (did/has done)

- a) b)
- c) d)

Q44. Odd one out:

- a) Happiness b) Kindness
- c) Quickly d) Sadness

Q45. Which is antonym of 'scarce'?

- a) b)
- c) d)

Q46. Identify figure of speech: 'The world is a stage'.

- a) b)
- c) d)

Q47. Fill blank: Neither teacher nor students ____ ready. (is/are)

- a) b)
- c) d)

Q48. Correct spelling:

- a) Separate b) Seperate
- c) Seperete

Q49. Read passage 'The Honest Clerk'. Why was clerk rewarded?

- a) b)
- c) d)

Q50. Which pronoun replaces 'Ali and I'?

- a) b)
- c) d)

Q51. Fill blank: Had he ____ earlier, he would have succeeded. (try/trying)

- a) b)
- c) d)

Q52. Which is synonym of 'diligent'?

- a) b)
- c) d)

Q53. Identify tense: They will have left by morning.

- a) b)
- c) d)

Q54. Choose best title for passage on perseverance.

- a) b)
- c) d)

Q55. Which punctuation ends interrogative sentence?

- a) b)
- c) d)

Q56. Odd one out:

- a) Teacher b) Farmer
- c) Slowly d) Doctor

Q57. Correct form: She is taller ____ her sister. (then/than)

- a) b)
- c) d)

Q58. Which is antonym of 'complex'?

- a) b)
- c) d)

Q59. Identify figure of speech: 'He runs like the wind'.

- a) b)
- c) d)

Q60. Which part of speech: Honesty is the best policy?

- a) b)
- c) d)

GENERAL KNOWLEDGE SECTION

Q61. Which is largest continent?

- a) Asia
- b) Africa
- c) Europe
- d) North America



Q62. Who was founder of Mughal dynasty?

- a) Babur
- b) Akbar
- c) Shah Jahan
- d) Aurangzeb

Q63. Which war ended in 1945?

- a) World War I
- b) World War II
- c) Korean War
- d) Vietnam War

Q64. In which city is this landmark?

- a) Paris
- b) London
- c) New York
- d) Rome



Q65. Capital of Turkey?

- a) Ankara
- b) Istanbul
- c) Izmir
- d) Antalya

Q66. Who proposed theory of relativity?

- a) Albert Einstein
- b) Isaac Newton
- c) Galileo Galilei
- d) Johannes Kepler

Q67. How many members did UN start with?

- a) 51
- b) 52
- c) 53
- d) 54



Q68. Which ocean is between Africa and America?

- a) Atlantic Ocean
- b) Indian Ocean
- c) Pacific Ocean
- d) Arctic Ocean

Q69. Who wrote 'Romeo and Juliet'?

- a) William Shakespeare
- b) Christopher Marlowe
- c) Ben Jonson
- d) John Webster

Q70. Which country hosted 2018 FIFA World Cup?

- a) Russia
- b) Brazil
- c) France
- d) Germany

Q71. Everest lies in which country?

- a)
- c)

- b)
- d)



Q72. Who was first female Prime Minister of Pakistan?

- a)
- c)

- b)
- d)

Q73. Name currency of Japan.

- a)
- c)

- b)
- d)

Q74. Which flag has red circle on white background?

- a)
- c)

- b)
- d)



Q75. Who invented telephone?

- a)
- c)

- b)
- d)

Q76. Capital city of Canada?

- a)
- c)

- b)
- d)

Q77. Which line divides Earth into two equal halves?

- a)
- c)

- b)
- d)



Q78. Who discovered circulation of blood?

- a)
- c)

- b)
- d)

Q79. Which treaty ended World War I?

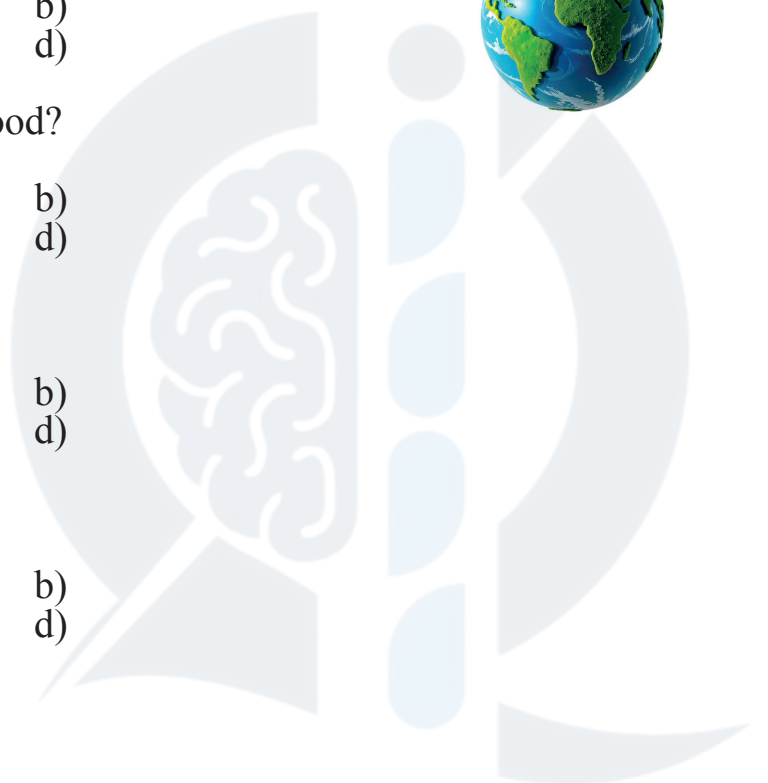
- a)
- c)

- b)
- d)

Q80. Who was first President of USA?

- a)
- c)

- b)
- d)

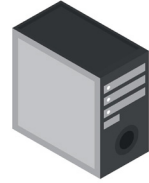


INFORMATION TECHNOLOGY SECTION

Q81. Expand CPU.

- a)
- c)

- b)
- d)



Q82. Difference between RAM and ROM.

- a)
- c)

- b)
- d)

Q83. Which device provides internet?

- a)
- c)

- b)
- d)



Q84. Expand LAN and WAN.

- a)
- c)

- b)
- d)

Q85. Which key deletes right side of cursor?

- a)
- c)

- b)
- d)



Q86. What is malware?

- a)
- c)

- b)
- d)

Q87. Which software is used for spreadsheets?

- a)
- c)

- b)
- d)

Q88. Which OS runs on smartphones?

- a)
- c)

- b)
- d)



Q89. Expand URL.

- a)
- c)

- b)
- d)

Q90. What is main function of operating system?

- a)
- c)

- b)
- d)

ANSWER KEY

MATHEMATICS SECTION

Q1: $x=2,3$

Reasoning: $x^2 - 5x + 6 = 0 \text{ ® } (x-2)(x-3)=0$.

Q2: Line slope=2, intercept=3

Reasoning: Equation $y=2x+3$.

Q3: 10

Reasoning: $(5+8+10+12+15)/5 = 50/5$.

Q4: 0.7

Reasoning: $1 - 0.3 = 0.7$.

Q5: $x^2 - x - 6$

Reasoning: Expand: $(x+2)(x-3)$.

Q6: 62.8 cm

Reasoning: Circumference= $2\pi r=2\times 3.14\times 10$.

Q7: -5

Reasoning: Sum of roots= $-p$, $2+3=5$, so $p=-5$.

Q8: $15/8$

Reasoning: $(3/4 \div 2/5) = 3/4 \times 5/2 = 15/8$.

Q9: Tallest bar interval

Reasoning: Mode from histogram.

Q10: $x=11$

Reasoning: $2x - 7=15 \text{ ® } 2x=22 \text{ ® } x=11$.

Q11: 1

Reasoning: Slope= $(7-3)/(6-2)=4/4=1$.

Q12: 25

Reasoning: $(5^3 \times 5^2)/5^n = 5^{(3+2-4)}=5^1=5$.

Q13: 1540 cm^3

Reasoning: $\pi r^2 h=22/7 \times 7^2 \times 10=1540$.

Q14: 60 km/h

Reasoning: $240/4=60$.

Q15: 8

Reasoning: Middle values $(8+8)/2=8$.

Q16: $(x-3)(x+3)$

Reasoning: x^2-9 factorizes.

Q17: $3^2+4^2=5^2$

Reasoning: $9+16=25=25$.

Q18: 150

Reasoning: 30% of number= $45 \text{ ® } \text{number}=150$.

Q19: $x<4$

Reasoning: $2x+3<11 \text{ ® } 2x<8 \text{ ® } x<4$.

Q20: 72° slice=20%

Reasoning: $72/360=0.2=20\%$.



SCIENCE SECTION

Q21: $V=IR$

Reasoning: Ohm's law formula.

Q22: Electrons outside, protons/neutrons in nucleus

Reasoning: Structure of atom.

Q23: Combining capacity

Reasoning: Valency=electrons gained/lost/shared.

Q24: Nucleus

Reasoning: Controls activities.

Q25: $C_nH_{2n}O_n + O_n \rightarrow CO_n + H_2O + \text{Energy}$

Reasoning: Respiration.

Q26: 9.8 m/s^2

Reasoning: Gravity on Earth.

Q27: Bending of light

Reasoning: Example: pencil in water.

Q28: Carries genetic info

Reasoning: DNA function.

Q29: Citric acid

Reasoning: Present in lemon.

Q30: Atoms of same element with diff masses

Reasoning: Example: C-12, C-14.

Q31: Resistance decreases

Reasoning: Parallel reduces total resistance.

Q32: OReasoning:

Universal donor blood group.

Q33: Interaction of organisms+environment

Reasoning: E.g., forest ecosystem.

Q34: Convex lens

Reasoning: Magnifying glass uses convex lens.

Q35: Mass conserved

Reasoning: Mass before=after reaction.

Q36: Insulin

Reasoning: Regulates blood sugar.

Q37: Jupiter

Reasoning: Planet with max moons.

Q38: Electrolytes

Reasoning: Salt speeds corrosion.

Q39: Splitting nucleus

Reasoning: Fission definition.

Q40: Vitamin D

Reasoning: Deficiency causes rickets.



ENGLISH SECTION

Q41: Hope, sacrifice

Reasoning: Message: hope gives life.

Q42: Kind

Reasoning: Benevolent synonym=kind.

Q43: has done

Reasoning: Correct tense.

Q44: Quickly

Reasoning: Others nouns.

Q45: Abundant

Reasoning: Antonym of scarce=abundant.

Q46: Metaphor

Reasoning: World=stage metaphor.

Q47: is

Reasoning: Neither...nor takes singular.

Q48: a

Reasoning: Correct spelling=Separate.

Q49: Honesty

Reasoning: Clerk rewarded for honesty.

Q50: We

Reasoning: Ali and I=We.

Q51: tried

Reasoning: Had he tried earlier.

Q52: Hardworking

Reasoning: Diligent synonym=hardworking.

Q53: Future perfect

Reasoning: Will have left=future perfect.

Q54: Perseverance pays

Reasoning: Best title.

Q55: ?

Reasoning: Interrogative ends with ?.

Q56: Slowly

Reasoning: Others professions.

Q57: than

Reasoning: Taller than.

Q58: Simple

Reasoning: Antonym of complex=simple.

Q59: Simile

Reasoning: He runs like wind=simile.

Q60: Noun

Reasoning: Honesty=noun.

General Knowledge Section

Q61: Asia

Reasoning: Largest continent=Asia.

Q62: Babur

Reasoning: Founder of Mughal dynasty.

Q63: World War II

Reasoning: Ended 1945.

Q64: Paris

Reasoning: Eiffel Tower in Paris.

Q65: Ankara



Reasoning: Capital of Turkey.
Q66: Einstein
Reasoning: Relativity by Einstein.
Q67: 51
Reasoning: UN started with 51 members.
Q68: Atlantic
Reasoning: Ocean between Africa and America.
Q69: Shakespeare
Reasoning: Romeo & Juliet by Shakespeare.
Q70: Russia
Reasoning: 2018 FIFA hosted by Russia.
Q71: Nepal
Reasoning: Everest lies in Nepal.
Q72: Benazir Bhutto
Reasoning: First female PM of Pakistan.
Q73: Yen
Reasoning: Currency of Japan=Yen.
Q74: Japan
Reasoning: Flag with red circle=Japan.
Q75: Bell
Reasoning: Telephone by Alexander Graham Bell.
Q76: Ottawa
Reasoning: Capital of Canada=Ottawa.
Q77: Equator
Reasoning: Divides Earth halves.
Q78: William Harvey
Reasoning: Discovered blood circulation.
Q79: Treaty of Versailles
Reasoning: Ended WWI.
Q80: George Washington
Reasoning: First US President.



INFORMATION TECHNOLOGY SECTION

Q81: Central Processing Unit

Reasoning: CPU=Central Processing Unit.

Q82: RAM temporary, ROM permanent

Reasoning: RAM volatile, ROM permanent.

Q83: Router/Modem

Reasoning: Provides internet.

Q84: Local/Wide Area Network

Reasoning: LAN/WAN expansions.

Q85: Delete

Reasoning: Delete key erases right side.

Q86: Malicious software

Reasoning: Malware=malicious software.

Q87: MS Excel

Reasoning: Spreadsheet software.

Q88: Android/iOS

Reasoning: Run on smartphones.

Q89: Uniform Resource Locator

Reasoning: URL=Uniform Resource Locator.

Q90: Manages hardware/software

Reasoning: OS controls resources.

Q91: At symbol in email

Reasoning: Separates user and domain.

Q92: Ctrl+V

Reasoning: Paste shortcut.

Q93: Fraud emails

Reasoning: Phishing=online fraud.

Q94: Portable storage

Reasoning: USB used for storage/transfer.

Q95: HyperText Transfer Protocol / Secure

Reasoning: HTTP/HTTPS expansions.

Q96: MS Access/Oracle

Reasoning: Database software.

Q97: Projector

Reasoning: Displays slides.

Q98: Stepwise instructions

Reasoning: Algorithm=step-by-step process.

Q99: Artificial Intelligence/Internet of Things

Reasoning: Expansions.

Q100: Google

Reasoning: Android OS developed by Google.



Q91. What does @ symbol represent?

- a)
- c)

- b)
- d)



Q92. Shortcut to paste text in Windows?

- a)
- c)

- b)
- d)

Q93. What is phishing in cyber security?

- a)
- c)

- b)
- d)

Q94. What is use of USB?

- a)
- c)

- b)
- d)



Q95. Expand HTTP and HTTPS.

- a)
- c)

- b)
- d)

Q96. Example of database software?

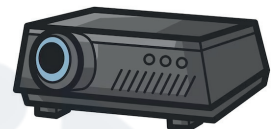
- a)
- c)

- b)
- d)

Q97. Which device displays slides?

- a)
- c)

- b)
- d)



Q98. Define algorithm with example.

- a)
- c)

- b)
- d)

Q99. Expand AI and IoT.

- a)
- c)

- b)
- d)

Q100. Which company developed Android OS?

- a)
- c)

- b)
- d)

