

Class 11 Mathematics
FBISE Paper 2022
Solved MCQs

1. If a, b, c are real numbers such that $a < b, c < 0, a \neq 0, b \neq 0$, then which of the following inequalities holds?
A. $ac > bc$ B. $ac^2 > bc^2$ C. $\frac{c}{a} > \frac{c}{b}$ D. $ac < bc$
2. What is the converse of $p \rightarrow q$?
A. $\neg p \rightarrow \neg q$ **B.** $q \rightarrow p$ C. $\neg q \rightarrow \neg p$ D. $p \leftrightarrow q$
3. The set of non-zero rational numbers is a group under the operation of:
A. addition B. Subtraction **C.** Multiplication D. Division
4. For what value of λ is the matrix $\begin{bmatrix} 1 & 0 & 0 \\ 2 & \lambda & 0 \\ 1 & 2 & 3 \end{bmatrix}$ singular?
A. 1 **B.** 0 C. 3 D. -4
5. If A is a skew-symmetric matrix then:
A. $A = A'$ **B.** $A = -A'$ C. $A = (\bar{A})'$ D. $A = -(\bar{A})'$
6. If the polynomial $f(x)$ is divided by $x + 2$ the quotient is $x - 2$ and the remainder is 2, then $f(x)$ will be:
A. $x^2 - 4$ B. $x^2 + 4$ **C.** $x^2 - 2$ D. $x^2 + 2$
7. If ω is a cube root of unity, then which of the following equations is true?
A. $1 + \omega = 0$ B. $1 + \omega^2 = 0$ C. $\omega + \omega^2 = 0$ **D.** $1 + \omega + \omega^2 = 0$
8. What is the partial fraction of $\frac{x^2 + 2x - 1}{x^2 - 1}$?
A. $1 + \frac{1}{x+1} - \frac{1}{x-1}$ B. $1 + \frac{1}{x-1} - \frac{1}{x+1}$
C. $1 - \frac{1}{x+1} - \frac{1}{x-1}$ **D.** $1 + \frac{1}{x-1} - \frac{1}{x+1}$
9. Find the second term of the sequence whose general term is $a_n = 2n^2 - 3$
A. -1 B. 13 **C.** 5 D. 11
10. If $s_\infty = \frac{2}{3}$ and $a = \frac{2}{7}$ in an infinite geometric progression, then the common ratio is:
A. $-\frac{4}{7}$ **B.** $\frac{4}{7}$ C. $\frac{2}{7}$ D. $-\frac{2}{7}$

11. For what values of x , the binomial expansion $(1 - \frac{x}{2})^{-1}$ is convergent (valid)?
 A. $x > 2$ B. $|x| > 2$ **C.** $|x| < 2$ D. $x < 1$
12. What is radius of the circle whose part of arc length of measure 4 is with central angle $\frac{\pi}{2}$?
A. $\frac{8}{\pi}$ B. $\frac{4}{\pi}$ C. $\frac{2}{\pi}$ D. $\frac{\pi}{2}$
13. If $D(-5, 5\sqrt{2})$ lies on the terminal side of θ then find the value of $\tan\theta$
 A. $-\frac{1}{\sqrt{2}}$ B. $\frac{1}{\sqrt{2}}$ C. $\sqrt{2}$ **D.** $-\sqrt{2}$
14. If ${}^nC_4 = {}^nC_{10}$ then $n=?$
 A. 4 B. 10 **C.** 14 D. 6
15. How many distinct three-digit numbers can be formed the integers 1, 2, 3, 4, 5, 6 if each digit is used at most once?
 A. 360 **B.** 120 C. 20 D. 10
16. What is the middle term in the expansion of $(x + x^{-4})^{14}$
 A. 6th term B. 7th term **C.** 8th term D. 9th term
17. $\sin(\frac{3\pi}{2} - a) =$
 A. $\sin a$ B. $\cos a$ C. $-\sin a$ **D.** $-\cos a$
18. What is the primary period of $\frac{\sin 2x}{1 + \cos 2x}$?
 A. 2π **B.** π C. $\frac{\pi}{2}$ D. 4π
19. A ladder makes angle 30° with the wall of height 8m. What is the length of the ladder?
A. 16 m B. 8 m C. 4 m D. 12 m
20. What is the value of $\sin^{-1}(-\frac{1}{2})$?
A. $-\frac{\pi}{6}$ B. $\frac{\pi}{6}$ C. $-\frac{\pi}{3}$ D. $\frac{\pi}{3}$