

ENTRANCE EXAM PDF OF MASTER OF COMPUTER APP. (M.C.A)



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YEAR: 2022

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ENTRANCE EXAMINATION – (2022 – 23)

SET A

ROLL NO.

Signature of Invigilator

Total Marks: 100

Time: 1 HOUR 30 MINUTES

Instructions to Candidates

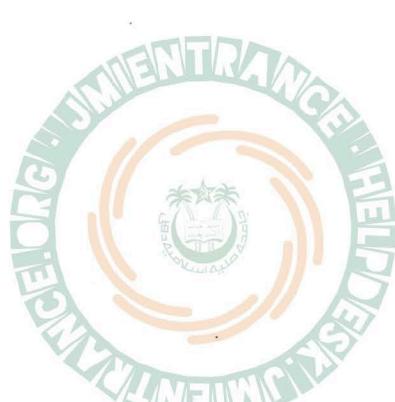
1. Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated.
2. This Question Booklet contains the cover page and a total of 100 Multiple Choice Questions of 1 mark each.
3. Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
4. There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
5. USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, page ETC. is strictly PROHIBITED.
6. Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
7. Answers must be marked in the OMR response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
8. The OMR response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response Sheet will not be evaluated.
9. Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
10. There are four options to each question marked A, B, C and D. Select one of the most appropriate options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.

CORRECT METHOD			
(A)	<input checked="" type="radio"/>	(C)	(D)

WRONG METHOD

(A) <input checked="" type="radio"/>	(B) <input checked="" type="radio"/>	(C) <input checked="" type="radio"/>	(D) <input checked="" type="radio"/>	(A) <input checked="" type="radio"/>	(B) <input checked="" type="radio"/>	(C) <input checked="" type="radio"/>	(D) <input checked="" type="radio"/>	(A) <input checked="" type="radio"/>	(B) <input checked="" type="radio"/>	(C) <input checked="" type="radio"/>	(D) <input checked="" type="radio"/>	(A) <input checked="" type="radio"/>	(B) <input checked="" type="radio"/>	(C) <input checked="" type="radio"/>	(D) <input checked="" type="radio"/>
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1. For real numbers x and y , define $_xR_y$ iff $x - y + \sqrt[3]{2}$ is an irrational number. Then the relation R is:
- reflexive
 - symmetric
 - transitive
 - None of these
2. If $f(x) = ax^7 + bx^3 + cx - 5$, a, b, c are real constants, and $f(-7) = 7$, then the range of $f(7) + 17 \cos x$ is
- $[-34, 0]$
 - $[0, 34]$
 - $[-34, 34]$
 - None of these
3. The domain of $\sqrt{|x-2|-1} + \sqrt{3-|x-2|}$ is
- $[-1, 3] \cup [5, \infty)$
 - $[-1, 5]$
 - $[1, 3]$
 - $[-1, 1] \cup [3, 5]$
4. If z is any complex number satisfying $|z - 3 - 2i| \leq 2$ then the minimum value of $|2z - 6 + 5i|$ is
- 6
 - 5
 - 0
 - 7
5. $\arg z + \arg \bar{z}$ ($z \neq 0$)
- π
 - $\pi/2$
 - 0
 - None of these
6. The value of b for which the equations $x^2 + bx - 1 = 0$ and $x^2 + x + b = 0$ have one root in common is
- $\sqrt{2}$
 - $-\sqrt{2}$
 - $i\sqrt{5}$
 - $-i\sqrt{3}$
- The coefficient of y in the expansion of $\left(y^2 + \frac{c}{y}\right)^5$ is
- $20c$
 - $10c^3$
 - $10c$
 - $20c^2$



8. In the expansion of $(1+x)^{50}$ the sum of coefficients of odd powers of x is
 (A) 2^{50}
 (B) 0
 (C) 2^{49}
 (D) 2^{51}
9. If R is the largest equivalence relation on a set A and S is any relation on A , then
 (A) $R \subset S$
 (B) $S \subset R$
 (C) $R = S$
 (D) None of these
10. The number of 4-digit numbers that can be formed with the digits 0, 1, 2, 3, 4, 5, 6, 7 so that each number contain digit 1 is
 (A) 1225
 (B) 1252
 (C) 1522
 (D) 480
11. The number of groups that can be made from 5 different green balls, 4 different blue balls and 3 different red balls, if at least 1 green and 1 blue ball is to be included
 (A) 3700
 (B) 3720
 (C) 4340
 (D) 3500
12. In a unique hockey series between India & Pakistan, they decide to play on till a team wins 5 matches. The number of ways in which the series can be won if no match ends in a draw is
 (A) 126
 (B) 252
 (C) 225
 (D) 200
13. 20 persons are sitting in a particular arrangement around a circular table. 3 persons are to be selected for leaders. The number of ways of selection of 3 persons such that no 2 were sitting adjacent to each other is
 (A) 600
 (B) 900
 (C) 800
 (D) 700
14. If A and B are two independent events in a sample space, then $P(\bar{A}/\bar{B})$ equals:
 (A) $1-P(A/\bar{B})$
 (B) $1-P(\bar{A}/B)$
 (C) $1-P(B)$
 (D) $1-P(A)$
15. 100 Identical coins, each with probability p , of showing heads are tossed. If $0 < p < 1$ and the probability of showing heads on 50 coins is equal to that of heads showing up on 51 coins, then value of p is
 (A) $\frac{1}{2}$
 (B) $\frac{49}{101}$
 (C) $\frac{51}{101}$
 (D) $\frac{52}{101}$

16. At any time, the total no. of people on the earth shake hands an odd no. of times ^{is}
 (A) Odd
 (B) Even
 (C) Can't say
 (D) Less information provided
17. Let 2 fair six-faced dice A and B be thrown simultaneously. If E_1 the event that die A shows up 4, E_2 is the event that die B shows up 2 and E_3 is the event is that the sum of the two no's both on the dice is odd then which statement is false
 (A) E_1 and E_2 are independent
 (B) E_2 and E_3 are independent
 (C) E_1 and E_3 are independent
 (D) E_1, E_2 and E_3 are independent
18. The sum of 3 numbers in A.P. is -3, and their product is 8. Then sum of squares of the number is
 (A) 9
 (B) 10
 (C) 21
 (D) 12
19. If $x, 2x + 2, 3x + 3$ are in G.P., then the 4^{th} term is
 (A) 27
 (B) -27
 (C) 13.5
 (D) -13.5
20. In a sequence of 21 terms, the first 11 terms are in A.P. with common difference 2 and the last 11 terms are in G.P. with common ratio 2. If the middle term of A.P. is equal to the middle term of G.P., then the middle term of the entire sequence is
 (A) $-10/31$
 (B) $10/31$
 (C) $32/31$
 (D) $-31/32$
21. If $1, \log_9(3^{1-x} + 2)$, and $\log_3(4 \times 3^x - 1)$ are in A.P., then x equals
 (A) $\log_3 4$
 (B) $1 - \log_3 4$
 (C) $1 - \log_4 3$
 (D) $\log_4 3$
22. Ram secures 100 marks in maths, then he will get a smartphone. Converse of this statement is:
 (A) If Ram will get a smartphone, then he does not secure 100 marks in maths.
 (B) If Ram will not get a smartphone, then he secures 100 marks in maths.
 (C) If Ram will get a smartphone, then he secures 100 marks in maths.
 (D) Ram gets both the smartphone and the marks.
23. Negation of $q \vee \sim(p \wedge r)$ is
 (A) $\sim q \wedge \sim(p \wedge r)$
 (B) $\sim q \wedge (p \wedge r)$
 (C) $\sim q \vee (p \wedge r)$
 (D) $\sim q \vee \sim(p \wedge r)$
24. The median of a set of 9 distinctive observations is 20.5. If each of the largest 4 observations of the set is increased by 2 then the median of the new set



- (A) Is increased by 2
 (B) Is decreased by 2
 (C) Is two times the original median
 (D) Remains same as that of original set

25. The variance of first 50 even natural numbers is

- (A) 699
 (B) 833
 (C) 833/4
 (D) 437/4

26. $(p \wedge q) \wedge (\neg p \wedge q)$ is

- (A) A tautology
 (B) Neither tautology nor a contradiction
 (C) A contradiction
 (D) Contradiction and tautology

27. Marks obtained by 4 students are: 25, 35, 45, 55. The average deviation from the mean is

- (A) 10
 (B) 9
 (C) 7
 (D) 8

28. The numbers 3, 5, 7, 4 have frequencies $x, x + 4, x - 3, x + 8$. If their arithmetic mean is 4, the value of x is

- (A) 7/4
 (B) 5/3
 (C) 2/3
 (D) 5/2

29. For two datasets, each of size 5, the variances are given to be 4 and 5 and the corresponding means are given to be 2 and 4 respectively. The variance of combined dataset is

- (A) 5/2
 (B) 6
 (C) 11/2
 (D) 13/2

30. If $\begin{vmatrix} x & 3 & 6 \\ 3 & 6 & x \\ 6 & x & 3 \end{vmatrix} = \begin{vmatrix} 2 & x & 7 \\ x & 7 & 2 \\ 7 & 2 & x \end{vmatrix} = \begin{vmatrix} 4 & 5 & x \\ 5 & x & 4 \\ x & 4 & 5 \end{vmatrix} = 0$ then x is equal to

- (A) 0
 (B) 3
 (C) -9
 (D) None of the above

31. If A, B, C are angles of a triangle then value of

$$\text{determinant} \begin{vmatrix} \sin 2A & \sin C & \sin B \\ \sin C & \sin 2B & \sin A \\ \sin B & \sin A & \sin 2C \end{vmatrix}$$

- (A) 0
 (B) π
 (C) 2π
 (D) None of these



32.

If $\begin{vmatrix} a & p & x \\ b & q & y \\ c & r & z \end{vmatrix} = 16$, then the value of $\begin{vmatrix} p+q & a+x & a+p \\ q+y & b+y & b+q \\ x+z & c+z & c+r \end{vmatrix}$ is

- (A) 4
- (B) 8
- (C) 16
- (D) 32

33.

If $\begin{vmatrix} x & 3 & 6 \\ 3 & 6 & x \\ 6 & x & 3 \end{vmatrix} = \begin{vmatrix} 2 & x & 7 \\ x & 7 & 2 \\ 7 & 2 & x \end{vmatrix} = \begin{vmatrix} 4 & 5 & x \\ 5 & x & 4 \\ x & 4 & 5 \end{vmatrix} = 0$ then x is equal to

- (A) 0
- (B) 3
- (C) -9
- (D) None of the above

34.

Evaluate the following integral:

$$\int_{-2}^2 \frac{3x^3 + 2|x| + 1}{x^2 + |x| + 1} dx$$

- (A) $3\log_7 7$
- (B) $\log_7 6$
- (C) $2\log_7 7$
- (D) $\log_7 7$

35.

Evaluate the following integral:

$$\int_{-\pi/2}^{\pi/2} \log\left(\frac{2 - \sin x}{2 + \sin x}\right) dx$$

- (A) 1
- (B) 0
- (C) -1
- (D) 2

36.

Solve the following differential equation: $x \frac{dy}{dx} + 1 = 0$; $y(-1) = 0$

- (A) $y = \log|x|$
- (B) $y = 2 \log|x|$
- (C) $y = \log|2x|$
- (D) $y = -\log|x|$

37.

If the matrix AB is zero, then

- (A) It is not necessary that either A=0 or, B=0
- (B) A=0 or B=0
- (C) A=0 and B=0
- (D) None of these

38.

Which statement is false?

- (A) If f(x) is continuous at x=a, then $|f(x)|$ is also continuous at x=a
- (B) If f(x) is continuous at x=a, then $f^{-1}(x)$ is also continuous at x=a
- (C) If $|f(x)|$ is continuous at x=a, then f(x) is also continuous at x=a
- (D) None of these

39.

The function f is defined in $[-5, 5]$ as $f(x) = x$, if x is rational and $f(x) = -x$, if x is irrational. Then

- (A) f(x) is continuous at every x, except x=0
- (B) f(x) is discontinuous at every x, except x=0
- (C) f(x) is continuous everywhere
- (D) f(x) is discontinuous everywhere



40. The relation $R = \{(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)\}$ on a set $A = \{1, 2, 3\}$ is
 (A) Neither Symmetric nor transitive
 (B) Reflexive but not transitive
 (C) Reflexive but not symmetric
 (D) Symmetric and transitive
41. The instructions for starting the computer are housed in ____
 (A) RAM
 (B) CD-ROM
 (C) ROM chip
 (D) None of these
42. _____ is the process of dividing the disk into tracks and sectors.
 (A) Tracking
 (B) Crashing
 (C) Allotting
 (D) Formatting
43. In MICR, C stands for.....
 (A) Computer
 (B) Color
 (C) Code
 (D) Character
44. The terms Goodput, Throughput and Maximum throughput are most closely associated with which among the following in computers?
 (A) Response Time
 (B) Bit Rate
 (C) Command Line Interface
 (D) Random memory
45. What will be the output of following statement?
`printf(3+"goodbye");`
 (A) goodbye
 (B) bye
 (C) odbye
 (D) dbye
46. What will be output of following statements?
`int i = 1, j; j=i-- -2; printf("%d", j);`
 (A) -2
 (B) -1
 (C) -3
 (D) 0
47. What will be output of following statements?
`int i = 1, j; j=- -i-2; printf("%d", j);`
 (A) -2
 (B) -1
 (C) -3
 (D) 0
48. What is the output of following C Program?
`#include <stdio.h>`
`int main()`
49. _____
 (A) _____
 (B) _____
 (C) _____
 (D) _____
50. _____
 (A) _____
 (B) _____
 (C) _____
 (D) _____
51. _____
 (A) _____
 (B) _____
 (C) _____
 (D) _____
52. _____
 (A) _____
 (B) _____
 (C) _____
 (D) _____
53. _____
 (A) _____
 (B) _____
 (C) _____
 (D) _____

```

    char grade[] = {'A', 'B', 'C'};
    printf("GRADE=%c, ", *grade);
    printf("GRADE=%d", grade);
    return 0;
}

```

- 49.
- (A) GRADE=some address of array, GRADE=A
 - (B) GRADE=A, GRADE=some address of array
 - (C) GRADE=A, GRADE=A
 - (D) Syntax error

What is the output of following C program:

```

int main()
{
    int a[3] = {10, 12, 14};
    a[1]=20; int i=0;
    while(i<3) {
        printf("%d ", a[i]);
        i++;
    }
    return 0;
}

```

- (A) 20 12 14
- (B) 10 12 20
- (C) 10 20 14
- (D) Run-time error

50. Which one is not a reserve keyword in C Language?

- (A) auto
- (B) main
- (C) case
- (D) register

51. Prototype of a function means _____

- (A) Name of function
- (B) Output of function
- (C) Declaration of function
- (D) Input of function

52. Far pointer can access _____

- (A) Single memory location
- (B) First and last memory location
- (C) All memory location
- (D) No memory location

53. A pointer that is pointing to NOTHING is called _____

- (A) Dangling pointer
- (B) Null pointer
- (C) Far pointer
- (D) Void pointer

54. What is the similarity between a structure, union and enumeration?

- (A) All of them let you define new structures
- (B) All of them let you define new values
- (C) All of them let you define new data types
- (D) All of them let you define new pointers

55. How will you free the allocated memory ?
(A) remove(var);
(B) free(var);
(C) delete(var);
(D) dalloc(var);
56. Which of the following describes the characteristics of SRAM?
(A) Based on combination of transistor and capacitor
(B) Less consumption of power
(C) More clear and more consumption of power
(D) Cheap but slow
57. The primary memory (also called main memory) of a personal computer consists of
(A) RAM only
(B) ROM only
(C) both RAM and ROM
(D) Cache memory
58. Which of the following has the fastest speed in the computer memory hierarchy?
(A) Cache
(B) Register in CPU
(C) Main memory
(D) Disk cache
59. In which type of memory, once the program or data is written, it cannot be changed?
(A) EPROM
(B) PROM
(C) EEPROM
(D) None of these
60. In which type of ROM, data can be erased by ultraviolet light and then reprogrammed by the user or manufacturer?
(A) PROM
(B) EPROM
(C) EEPROM
(D) Both a and b
61. In which numbering system can the binary number 101101111000101 be easily converted to?
(A) Decimal system
(B) Gray
(C) Octal system
(D) Hexadecimal system
62. Which bitwise operator is suitable for turning off a particular bit in a number?
(A) && operator
(B) || operator
(C) & operator
(D) ! operator
63. Convert $(231)_4$ into $(\underline{\quad})_3$.
(A) 1102
(B) 1201
(C) 1100
(D) 1200

64.

- Convert $(1278)_{12}$ into (____)₄
- (A) 200330
 - (B) 220330
 - (C) 12302
 - (D) 200300

65.

- Convert $(110100)_2$ into (____)₁₆
- (A) CD
 - (B) 43
 - (C) 34
 - (D) D

66.

Simplify the following Boolean expression for three variables.
 $F = A'B'C + A'B'C + \cancel{ABC} + \cancel{A'B'C} + ABC + AB'C$

- (A) $A'B + AB'$
- (B) $AB' + B' + A'B$
- (C) $AB' - A' + A'B$
- (D) $A' - B' + A'B$

67.

The universal gate is

- (A) NAND gate
- (B) OR gate
- (C) AND gate
- (D) None of the above

68.

The inputs of a NAND gate are connected together. The resulting circuit is

- (A) OR gate
- (B) AND gate
- (C) NOT gate
- (D) None of the above

69.

Exclusive-OR (XOR) logic gates can be constructed fromlogic gates.

- (A) OR gates only
- (B) AND gates and NOT gates
- (C) AND gates, OR gates, and NOT gates
- (D) OR gates and NOT gates

70.

.....truth table entries are necessary for a four-input circuit.

- (A) 16
- (B) 4
- (C) 8
- (D) 12

71.

Minimize following 3 variable function.

$$F(A, B, C) = \sum(0, 1, 6, 7)$$

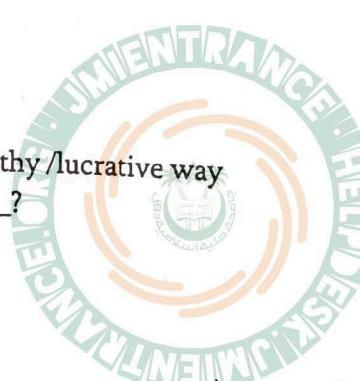
k-map

- (A) $A'B' + AB$
- (B) $A'B + AB'$
- (C) AB
- (D) $AB' + AB$

72.

When some unidentified/unknown person/firm sends you mail in a trustworthy /lucrative way asking for sensitive banks and online payment information, this is a case of ____?

- (A) Spam
- (B) Hacking
- (C) Phishing



73. (D) Vishing
Which memory card format is most widely used in smartphones?

- (A) Compact Flash
- (B) Secure Digital
- (C) SmartMedia
- (D) Memory Stick

74. Which of the following is a popular VoIP application?
(A) Google chat

- (B) Skype
- (C) iPhone
- (D) WiFi

75. Computer language used for Internet is:

- (A) HTML
- (B) Python
- (C) Java
- (D) R

76. Convert the following number to decimal: $(1032.2)_4$

- (A) 78
- (B) 78.5
- (C) 79
- (D) 68.5

77. _____ controls the way in which the computer system functions and provides a means by which users can interact with the computer.

- (A) Platform
- (B) Application software
- (C) Operating system
- (D) Motherboard

78. Python was conceived in the late _____ by Guido van Rossum.

- (A) 1960s
- (B) 1970s
- (C) 1980s
- (D) 1990s

79. Which of the following memories must be refreshed many times per second?

- (A) EPROM
- (B) ROM
- (C) Static RAM
- (D) Dynamic RAM

80. USB-type storage device is

- (A) Secondary
- (B) Axillary
- (C) Tertiary
- (D) Primary

Directions (81-82): Choose the best word from the options.

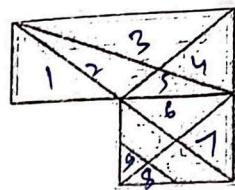
Climate change is one of the most _____ contested environmental debates of our time.

- (A) hot
- (B) heated
- (C) hotly

82. (D) hoting
 Gulf Stream ocean current _____ disrupted? _____ way, Antarctica is a crucial element in this debate.
- (A) be, either
 (B) was, neither
 (C) is, either
 (D) are, neither
83. Identify the word which means the same as HEAVING UP.
- (A) hiding
 (B) running away
 (C) climbing
 (D) raising
84. "Science is actually doing less than nothing." Here the word ACTUALLY is
- (A) noun
 (B) Verb
 (C) adjective
 (D) adverb
85. Noun form of INTELLECTUAL is
- (A) Intellectually
 (B) Intellect
 (C) Intelligence
 (D) Intelligent
86. The verb form of PRESSURE is
- (A) Pressuring
 (B) Pressuringly
 (C) Press
 (D) Pressing
- Direction (87-90): Supply the correct tense forms of the verbs given in the brackets.
- I certainly _____ (help) my colleague if I had been there.
87. (A) will help
 (B) helped
 (C) would have helped
 (D) should have helped
88. He always _____ (try) to prove that the earth revolves round the sun.
- (A) tried
 (B) tries
 (C) was trying
 (D) is trying
89. The train had left before I _____ (reach) the station.
- (A) reach
 (B) was reaching
 (C) reached
 (D) reaches
90. Syam told Sita that she _____ (play) tennis.
- (A) was playing
 (B) had been playing
 (C) is playing

(D) will play

91.



How many triangles are there in this figure?

- (A) 19
- (B) 21
- (C) 24
- (D) 25

92.

I am facing South, I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?

- (A) North
- (B) North-west
- (C) East
- (D) North-east

93.

Identify the wrong term in this series: 31, 29, 31, 30, 28, 30, 29, 27, 26

- (A) 29
- (B) 28
- (C) 27
- (D) 26

94.

If D=23, H=19, decode 8767

- (A) IGFH
- (B) STUR
- (C) STUT
- (D) ZYXW

95.

If BEAT is written as GIDV, then SOUP may be written as

- (A) YSXR
- (B) ZSYS
- (C) XSYS
- (D) ZYXW

96.

If $213=419$, $322=924$, $415=16125$; then $215=?$

- (A) 425
- (B) 1625
- (C) 4125
- (D) 2541

$$\begin{array}{r} 215 \\ \times 102 \\ \hline 215 \\ 215 \\ \hline 16125 \end{array}$$

97.

If A+B means B is the brother of A; A X B means B is the husband of A; A-B means A is the mother of B; A% B means A is the father of B, which of the following expression shows that Q is the grandmother of T?

- (A) Q - P + R % T
- (B) P X Q % R - T
- (C) P X Q % R + T
- (D) P + Q % R - T

Directions (98-99): Find the relation or order in which letters have been grouped together in

98.

the first two sets and then find a set of letters to fit in the place of question mark.
ARUN : CTWP :: RITA : ?

- (A) TKCV
- (B) JMOP
- (C) TKVC
- (D) TVCK

99.

THIN : MCFM :: PRTV : ?

- (A) IMQU
- (B) INQU
- (C) INRV
- (D) IMRV

100.

If 'HEALTH' is written as 'GSKZDG', then how will 'NORTH' be written in that code?

- (A) OPSUI
- (B) GSQNM
- (C) FRPML
- (D) IUSPO