



NPR GROUP OF INSTITUTIONS

NPR Nagar, Natham, Dindigul – 624 401, Tamilnadu, India

Phone No: 04544-246500, 246501, 246502

Website: nprcolleges.org E-Mail: nprgi@nprcolleges.org

MERIT SCHOLARSHIP EXAMINATION - 2022

ANSWER KEY

Date & Day of Exam : 10.06.2022 (Friday)

Time : 11.00 am

QPS_NO	GROUP	SUBJECTS	No. of Questions	Remarks
04	Vocational	English	20	
		Mathematics	20	
Total			40	

“All the Best”

Date of Publication : 15.06.2022 (Wednesday)

Chief Co-ordinator / MSE-2022

N.B: Date of Publication of Results in our official website www.nprcolleges.org on 20.06.2022 (Monday) @ 10.00 am.



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ENGLISH

N.B: 1. Answer ALL the questions 2. Select most appropriate answer from (a) / (b) / (c) / (d) 3. No negative marks 4. Using tick mark () for correct answer

- Where did the boys Nicola and Jacopo go every Sunday?
(a) Padua (b) **Poleta**
(c) Scotland (d) Verona
- Choose the appropriate synonyms of the word 'Humble'
(a) **Polite** (b) Proud
(c) Pretentious (d) Lethargic
- "At dawn, my _____ delighted on its rest...."
(a) nose (b) **eyes**
(c) ears (d) head
- By whom was the trolley commandeered at once
(a) Mechanic and Journalist (b) Driver and Machinist
(c) **Driver and Mechanic** (d) Nurse and ward sister
- Howmany years have Aksionov suffered in prison?
(a) Six years (b) Sixteen years
(c) **Twenty six years** (d) Twenty years
- Who is ready to sacrifice his life for reputation?
(a) School boy (b) Justice
(c) Lover (d) **Soldier**
- 'Cup of tea' is an idiom which means -----
(a) Exit the world (b) To wait for a situation
(c) **One's favourite activity** (d) To be well organized
- The word which is used as synecdoche to signify the power of a king
(a) **Sceptre** (b) Hyades
(c) Isle (d) Sphere
- Who said whom- 'you were told that I was a secret Agent'
(a) Fowler to Ausable (b) **Fowler to max**
(c) Ausable to fowler (d) Ausable to Henry
- Who is the author of the lesson in celebration of being Alive
(a) A.J.cronin (b) Eric Arthur blair
(c) Yann martel (d) **Christiaan Barnard**



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11 What is the world compared to in the poem All the world's stage

(a) Puppet

(b) Life

(c) Stage

(d) Platform

12 The sun shone on venus only once in ----- years

(a) Five

(b) Seven

(c) Six

(d) Four

13 Who was the Midnight visitor....

(a) Max

(b) Fowler

(c) Ausable

(d) Henry

14 Choose the Tetra syllabic word of the following

(a) Autobiography

(b) Disadvantage

(c) Father

(d) Justifies

15 What does Margot like the most

(a) Book

(b) Friends

(c) Sun

(d) Rain

16 Choose the meaning of the foreign word in the sentence

The **Magnum opus** of great scholar are honoured

(a) New invention

(b) Archeological

(c) New projects

(d) Great work of art

17 Taking freedom in our own hands will lead to -----

(a) Self discipline

(b) Chaos

(c) Code of conduct

(d) Freedom

18 Replace the underlined phrasal verb

He **Cut off** a slice from the loaf of bread

(a) Join

(b) Clutch

(c) Eliminate

(d) Separate

19 What was Lucia suffering from?

(a) Mononucleosis

(b) Colds and flu

(c) Tuberculosis

(d) Conjunctivities

20 Replace the following word with possibly polite form 'Senior citizen'

(a) Preowned

(b) Old

(c) Poor

(d) Disabled



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1 $A = \begin{bmatrix} -2 & 2 & -1 \\ 0 & 5 & 1 \\ 0 & 0 & 0 \end{bmatrix}$ என்ற அணியின் தரம்

அ) 1

ஆ) 3

The rank of matrix $A = \begin{bmatrix} -2 & 2 & -1 \\ 0 & 5 & 1 \\ 0 & 0 & 0 \end{bmatrix}$

A) 1

C) 3

ஆ) 2
 ஈ) 0

B) 2
 D) 0

2 $adj A = \begin{bmatrix} 2 & 3 \\ 4 & -1 \end{bmatrix}$ மற்றும் $adj B = \begin{bmatrix} 1 & -2 \\ -3 & 1 \end{bmatrix}$ எனில் $adj (AB)$ ஆகாது

அ) $\begin{bmatrix} -7 & -1 \\ 7 & -9 \end{bmatrix}$

ஆ) $\begin{bmatrix} -7 & 7 \\ -1 & -9 \end{bmatrix}$

If $adj A = \begin{bmatrix} 2 & 3 \\ 4 & -1 \end{bmatrix}$ and $adj B = \begin{bmatrix} 1 & -2 \\ -3 & 1 \end{bmatrix}$ then $adj (AB)$ is

A) $\begin{bmatrix} -7 & -1 \\ 7 & -9 \end{bmatrix}$

C) $\begin{bmatrix} -7 & 7 \\ -1 & -9 \end{bmatrix}$

ஆ) $\begin{bmatrix} -6 & 5 \\ -2 & -10 \end{bmatrix}$
 ஈ) $\begin{bmatrix} -6 & -2 \\ 5 & -10 \end{bmatrix}$

B) $\begin{bmatrix} -6 & 5 \\ -2 & -10 \end{bmatrix}$
 D) $\begin{bmatrix} -6 & -2 \\ 5 & -10 \end{bmatrix}$

3 கீழ்க்கண்டவற்றில் தவறானது எது?

அ) $\overline{Z_1 Z_2} = \overline{Z_1} \overline{Z_2}$

ஆ) $Im(Z) = \frac{Z - \overline{Z}}{2i}$

Which one of the following is incorrect?

A) $\overline{Z_1 Z_2} = \overline{Z_1} \overline{Z_2}$

C) $Im(Z) = \frac{Z - \overline{Z}}{2i}$

ஆ) $Re(Z) = \frac{Z_1 \overline{Z}}{2}$
 ஈ) $\overline{\overline{Z}} = Z$

B) $Re(Z) = \frac{Z_1 \overline{Z}}{2}$
 D) $\overline{\overline{Z}} = Z$

4 i^{1729} ன் மதிப்பு

அ) 1

ஆ) -1

The value of i^{1729} is

A) 1

C) -1

ஆ) i
 ஈ) -i

B) i
 D) -i

5 $x^2 - 4x + 7 = 0$ என்ற சமன்பாட்டின் ஒரு மூலம் $2 + \sqrt{3}i$ எனில் மற்றொரு மூலம்

அ) $2i + \sqrt{3}$

ஆ) $\sqrt{3} + 2$

ஆ) $2 - \sqrt{3}i$

ஈ) $\sqrt{3}i + 2$



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If $2 + \sqrt{3}i$ is a root of $x^2 - 4x + 7 = 0$, then another root is

A) $2i + \sqrt{3}$

B) $2 - \sqrt{3}i$

C) $\sqrt{3} + 2$

D) $\sqrt{3}i + 2$

6 கீழ்க்காண்பவைகளில் எது $7x^3 - 43x^2 = 43x - 7$ என்ற சமன்பாட்டிற்கு தீர்வாக அமையும்?

அ) -1

ஆ) 1

இ) 0

ஈ) 2

Which of the following id must be a solution of $7x^3 - 43x^2 = 43x - 7$

A) -1

B) 1

C) 0

D) 2

7 $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$ ன் முதன்மை மதிப்பு

அ) $\frac{\pi}{3}$

ஆ) $\frac{\pi}{4}$

இ) $\frac{\pi}{6}$

ஈ) $\frac{\pi}{2}$

The principal value of $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$

A) $\frac{\pi}{3}$

B) $\frac{\pi}{4}$

C) $\frac{\pi}{6}$

D) $\frac{\pi}{2}$

8 $\cot^{-1}\left(\frac{1}{7}\right) = \theta$ எனில் $\cos \theta$ ன் மதிப்பு

அ) $\frac{1}{7}$

ஆ) 7

இ) $\frac{1}{\sqrt{2}}$

ஈ) $\frac{1}{5\sqrt{2}}$

If $\cot^{-1}\left(\frac{1}{7}\right) = \theta$, Then the value of $\cos \theta$,

A) $\frac{1}{7}$

B) 7

C) $\frac{1}{\sqrt{2}}$

D) $\frac{1}{5\sqrt{2}}$

9 $x^2 + y^2 + 6x - 4y + 4 = 0$ என்ற வட்டத்தின் ஆரம்

அ) 1

ஆ) 2

இ) 3

ஈ) 4

The radius of the circle $x^2 + y^2 + 6x - 4y + 4 = 0$

A) 1

B) 2

C) 3

D) 4



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- 10 $y^2 = 4ax$ என்ற பரவளையத்தின் செவ்வகத்தின் நீளம்
- அ) 4 ஆ) $4a$
இ) a ஈ) 0
- The length of latus rectum of the parabola $y^2 = 4ax$ is
- A) 4 B) $4a$
C) a D) 0
- 11 $2\hat{i} - \hat{j} + 3\hat{k}, 3\hat{i} + 2\hat{j} + \hat{k}, \hat{i} + m\hat{j} + 4\hat{k}$ ஆகியவை ஒரு தள அமைவன எனில் m -ன் மதிப்பு
- அ) 3 ஆ) -3
இ) -4 ஈ) 2
- If $2\hat{i} - \hat{j} + 3\hat{k}, 3\hat{i} + 2\hat{j} + \hat{k}, \hat{i} + m\hat{j} + 4\hat{k}$ are coplanar then the value of m
- A) 3 B) -3
C) -4 D) 2
- 12 கீழ்க்காண்பவைகளில் எது ஏற்படாது அல்ல?
- அ) $\vec{a} \cdot (\vec{b} \times \vec{c})$ ஆ) $\vec{a} \cdot (\vec{b} \cdot \vec{c})$
இ) $\vec{a} \times (\vec{b} \times \vec{c})$ ஈ) $\vec{a} \times (\vec{b} \cdot \vec{c})$
- Which one of the following is incorrect?
- A) $\vec{a} \cdot (\vec{b} \times \vec{c})$ B) $\vec{a} \cdot (\vec{b} \cdot \vec{c})$
C) $\vec{a} \times (\vec{b} \times \vec{c})$ D) $\vec{a} \times (\vec{b} \cdot \vec{c})$
- 13 $\lim_{x \rightarrow -1} \left(\frac{x^2 - 3x + 2}{x^2 + 4x + 3} \right)$ ன் மதிப்பு
- அ) $\frac{1}{2}$ ஆ) $\frac{1}{3}$
இ) 3 ஈ) 2
- Compute the limit $\lim_{x \rightarrow -1} \left(\frac{x^2 - 3x + 2}{x^2 + 4x + 3} \right)$
- A) $\frac{1}{2}$ B) $\frac{1}{3}$
C) 3 D) 2
- 14 $y = x^4 + 2x^2 - x$ என்ற வளைவின் சாய்வு $x = 1$ என்ற புள்ளியில்
- அ) 5 ஆ) 6
இ) 7 ஈ) 8
- The slope of the curve $y = x^4 + 2x^2 - x$ at $x=1$
- A) 5 B) 6
C) 7 D) 8



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- 15 ஒரு வட்டவடிவவளர்ச்சி ஆரம் 10 செ.மீ ஆரத்தின் அளவில் தோராயமாக 0.02 செ.மீ பிழை உள்ளது எனில் அதன் பரப்பில் ஏற்படும் தோராய சதவீதப்பிழையைக் காண்க
- அ) 0.2 % ஆ) 0.4 %
இ) 0.04 % ஈ) 0.08 %
- A circular template has a radius of 10cm the measurement of radius has an approximate error of 0.02cm. Then the percentage error of 0.02cm. Then the percentage error in calculating area of this template is
- A) 0.2 % B) 0.4 %
C) 0.04 % D) 0.08 %
- 16 $f(x) = \frac{x}{x+1}$ எனில் அதன் வகையீடு
- அ) $\frac{-1}{(x+1)^2} dx$ ஆ) $\frac{1}{(x+1)^2} dx$
இ) $\frac{1}{x+1} dx$ ஈ) $\frac{-1}{x+1} dx$
- If $f(x) = \frac{x}{x+1}$, then its differential is given by
- A) $\frac{-1}{(x+1)^2} dx$ B) $\frac{1}{(x+1)^2} dx$
C) $\frac{1}{x+1} dx$ D) $\frac{-1}{x+1} dx$
- 17 $f(x)$ ஒரு ஒற்றைச் சார்பு எனில் $\int_{-a}^a f(x) dx =$
- அ) 1 ஆ) -1
இ) 0 ஈ) ∞
- If $f(x)$ is an odd function, then $\int_{-a}^a f(x) dx =$
- A) 1 B) -1
C) 0 D) ∞
- 18 $\int_0^{\frac{\pi}{2}} (\sin^2 x + \cos^4 x) dx$ ன் மதிப்பு
- அ) $\frac{7\pi}{16}$ ஆ) $\frac{16\pi}{7}$
இ) 7π ஈ) $\frac{6}{7\pi}$
- Evaluate $\int_0^{\frac{\pi}{2}} (\sin^2 x + \cos^4 x) dx$
- A) $\frac{7\pi}{16}$ B) $\frac{16\pi}{7}$
C) 7π D) $\frac{6}{7\pi}$
- 19 $\frac{d^2x}{dx^2} + \left(\frac{dy}{dx}\right)^{\frac{1}{2}} + x^{\frac{1}{2}} = 0$ எனும் வகைக்கெழுத்து சமன்பாட்டின் வரிசை மற்றும் படி முறையே
- அ) (2,3) ஆ) (3,3)
இ) (2,6) ஈ) (2,4)



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The order and degree of the differential equation $\frac{d^2x}{dx^2} + \left(\frac{dy}{dx}\right)^{\frac{1}{3}} + x^{\frac{1}{4}} = 0$ are respectively

A) (2,3)



B) (3,3)



C) (2,6)



D) (2,4)



20 $\frac{dy}{dx} + p(x) = 0$ னி தீரி

அ) $y = ce^{\int p dx}$



ஆ) $y = ce^{-\int p dx}$



ஆ) $x = ce^{\int p dy}$



ஈ) $x = ce^{\int p dy}$



The solution of $\frac{dy}{dx} + p(x) = 0$

A) $y = ce^{\int p dx}$



B) $y = ce^{-\int p dx}$



C) $x = ce^{\int p dy}$



D) $x = ce^{\int p dy}$

