

অনুনির্ভরশি অধীক্ষা

উত্তরভার পণিত

প্রথম পত্র

[২০২০ সালের সিলেবাস অনুযায়ী]

সময়—২৫ মিনিট

পূর্ণমান—২৫

বরিশাল বোর্ড

বিষয় কোড :

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পেট :

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বিশেষ প্রক্রিয়া : সরবরাহকৃত অনুনির্ভরশি অধীক্ষার উত্তরপত্রে প্রত্যেক প্রশ্নিক সমস্যার বিশদীকৃত প্রত্যেক অনুনির্ভরশিত বৃত্তসমূহ হতে সঠিক/সর্বোৎকৃষ্ট উত্তরের ক্রটি হল পড়েই কলাম দ্বারা সম্পূর্ণ ভরাট কর। প্রতিটি প্রশ্নের মান ১।

প্রশ্নপত্রে কোনো প্রকার দাগ/চিহ্ন দেয়া যাবে না।

১। $A = \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ এবং $B = \begin{bmatrix} a & b \end{bmatrix}$ হলে $BA =$ কত?

(ক) $[-b \ a]$ (খ) $\begin{bmatrix} -b \\ a \end{bmatrix}$

● $[b - a]$ (ঘ) $\begin{bmatrix} b \\ -a \end{bmatrix}$

২। x -অক্ষের উপর সমস্ত বৃত্তের সমীকরণ হল—

(ক) $x = 2$ (খ) $x = y$

● $y = 1$ (ঘ) $x - y = 2$

৩। $\tan A = \frac{1}{\sqrt{3}}$ হলে $\sin 3A =$ কত?

(ক) 0 ● 1 (গ) $\frac{\sqrt{3}}{2}$ (ঘ) $\frac{1}{\sqrt{3}}$

নিচের অক্ষের আলোকে ৪ ও ৫ নং প্রশ্নের উত্তর দাও।



৪। এমনকি বৃত্তের কেন্দ্র C হলো—

(ক) (1, 1) (খ) (2, 2) (গ) (1, 2) ● (ঘ) (2, 1)

৫। AB এর দৈর্ঘ্য কত?

(ক) 2 একক (খ) 4 একক

● $2\sqrt{3}$ একক (ঘ) $\sqrt{3}$ একক

৬। $\lim_{x \rightarrow \infty} \frac{2x^2 + 3x + 1}{2x^2 - 4x + 2}$ এর মান কত?

(ক) 0 (খ) ∞

(গ) $\frac{1}{2}$ ● 1

৭। $x^2 + y^2 = 4$ বৃত্তের $(-1, \sqrt{3})$ বিন্দুতে স্পর্শকের সমীকরণ কোনটি?

● $x - \sqrt{3}y + 4 = 0$

(খ) $x - \sqrt{3}y - 4 = 0$

(গ) $\sqrt{3}x - y + 4 = 0$

(ঘ) $\sqrt{3}x - y - 4 = 0$

৮। ABC ত্রিভুজের তিনটি বাহু $a = 3$, $b = 4$ এবং $c = 5$ হলে—

I. $5 = 4 \cos A + 3 \cos B$

II. $\cos \frac{C}{2} = \frac{1}{\sqrt{2}}$

III. $\tan \frac{A-C}{2} = \frac{1}{4} \cot \frac{B}{2}$

নিচের কোনটি সঠিক?

● I ও II (খ) I ও III

(গ) II ও III (ঘ) I, II ও III

৯। $\int_2^3 \frac{\ln(x-1)}{x-1} dx$ এর মান কত?

(ক) $2 \ln 2$ (খ) $2 (\ln 2)^2$

(গ) $\frac{1}{2} \ln 2$ ● $\frac{1}{2} (\ln 2)^2$

১০। $(0, 1)$ বিন্দু হতে $x^2 + y^2 - 8x - 6y + 21 = 0$ বৃত্তের উপর অঙ্কিত স্পর্শকের দৈর্ঘ্য কত?

(ক) 2 (খ) $2\sqrt{5}$

● 4 (ঘ) $4\sqrt{5}$

১১।



নিচের ক্ষেত্রগুলোর কোনো একটির ক্ষেত্রফল কত বর্গ একক?

● $\frac{1}{2}$ (খ) 1

(গ) $\frac{3}{2}$ (ঘ) 2

১২। $y = \tan^{-1} \frac{4x}{1-4x^2}$ হলে $\frac{dy}{dx} =$ কত?

● $\frac{2}{1+4x^2}$ (খ) $\frac{2}{1-4x^2}$

(গ) $\frac{4}{1+4x^2}$ (ঘ) $\frac{4}{1-4x^2}$

[পর পৃষ্ঠা প্রক্রিয়া]

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web indian railways manufactures its diesel locomotives at diesel locomotive works dlw a premier production unit working under the ministry of indian railways the above unit was established in 1961 in collaboration with m s american locomotive company also usa at varanasi the oldest living city of human civilization since

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web this article lists the diesel locomotives that have operated or are operating on indian railways introduction list of diesel locomotives of india classification syntax broad gauge locomotives mixed class wdm series passenger class wdp series goods class wdg series shunter class wds series

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web the objective of this block is to make you understand about the major components of the diesel engine as per the following details construction manufacturing process salient features and required dimensional accuracy in the key areas assembling technique and their inspection procedure failure analysis of components structure introduction

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web diesel locomotives were introduced in indian railways in late 1950s when first lot of diesel locomotives was imported
from m s alco usa with the setting up of diesel locomotive works dlw at varanasi in the year 1961 the additions to diesel
locomotive fleet started at a regular pace

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web diesel locomotives shaped the indian railways to what we see it as today with the arrival of the america wdm 1 india has
produced thousands of diesel locomotives of different types most of which still remain operational wdm 2 bought way back in
1960s was modified and shaped into tens of different locos that ruled railways for well over 40

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web in the year 1957 indian railways imported its first mainline diesel locomotive from the american locomotive company
alco in new york and classified it as wdm1 the wdm1 17000 was the first locomotive of the class after which about one
hundred of these locomotives were imported in india for operation in the eastern and south eastern

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web the alco dl560c is a series of diesel electric locomotive with ac electric transmission designed by the american
locomotive company and produced under license by banaras locomotive works blw varanasi india for indian railways as their
classes wdm 2 wdm 3a 2c wdm 3d and wdg 3a for operation in india

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modern and equipped with the most advance traction system as well as locomotive control system in india supplied by
siemens incidentally this is india s 200th igbt based diesel locomotive

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web the indian railways primarily operates a fleet of electric and diesel locomotives along with several compressed natural gas cng locomotives steam locomotives are operated on a few world heritage sites and also run occasionally as heritage trains a locomotive is also known as a loco or more popularly as an engine

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