



भारतीय वायु सेना / Indian Air Force



INDIAN AIR FORCE INVITES ONLINE APPLICATIONS FROM UNMARRIED MALE (INDIAN/NEPALEES) CANDIDATES FOR SELECTION TEST FOR INTAKE 01/2019 ON 10 & 11 MARCH 2018 TO JOIN AS AIRMEN IN GROUP 'X' TRADES (EXCEPT EDUCATION INSTRUCTOR TRADE) AND GROUP 'Y' TRADES (EXCEPT AUTOMOBILE TECHNICIAN, GROUND TRAINING INSTRUCTOR, INDIAN AIR FORCE (POLICE), INDIAN AIR FORCE (SECURITY) AND MUSICIAN TRADES)

CAUTION

SELECTION IN THE INDIAN AIR FORCE IS "FAIR & TRANSPARENT" AND ON MERIT ONLY. AT NO STAGE ANY BRIBE IS REQUIRED TO BE PAID TO ANYONE FOR SELECTION OR RECRUITMENT IN THE INDIAN AIR FORCE. CANDIDATES SHOULD NOT FALL PREY TO UNSCRUPULOUS PERSONS POSING AS RECRUITING/SELECTING AGENTS.

MOBILE PHONES/ELECTRONIC DEVICES WILL NOT BE PERMITTED IN TESTING AREA

IMPORTANT NOTIFICATION TO CANDIDATES

- Application will be filled ONLINE by the candidates and detailed instructions to fill up the same are available at www.airmenselection.cdac.in and the same would also be available on www.careerindianairforce.cdac.in.
- This examination is valid for one intake/entry only.
- ONLINE REGISTRATION will commence on 15 DECEMBER 2017 and will close on 12 JANUARY 2018.** Only ONLINE REGISTERED applications shall be accepted.
- Following Certificates are to be uploaded as the case may be:-
 - Class 10/matriculation passing certificate.
 - Intermediate/10+2 or equivalent marksheet/marksheets (if applying on the basis of 12th intermediate or equivalent educational qualifications).
 - 3 Yrs Engineering Diploma Final Year Marksheet (if applying on the basis of 3 Yrs Engineering Diploma from a Govt. recognised polytechnic in prescribed stream).
 - Passport size colour photograph of size 10 KB to 50 KB (front portrait in light background without head gear except for Sikhs) recent (taken not before November 2017). The photograph is to be taken with candidate holding a black slate in front of his chest with his Name and Date of Photograph taken, clearly written on it with white chalk in capital letters.
 - Candidate's left hand thumb impression image (Size 10 KB to 50 KB).
 - Candidate's signature image (Size 10 KB to 50 KB).
 - Candidate's parents (Father/Mother/Guardian) signature image (if candidate is below 18 years on the date of filling the online application).
 - The marksheet indicating marks in English subject (if applying on the basis of 3 Yrs Engineering Diploma qualification) in diploma or 12th/10th if English is not a subject in diploma.
- Examination Fee** : Examination fee of Rs.250/- is to be paid by the candidate while registering for the online examination. The payment can be made by using Debit Cards/ Credit Cards/Internet Banking through payment gateway. The examination fee can also be paid by Challan payment at any Axis Bank Branch.
- Candidate must have his valid E-mail ID and Mobile No. for successful online registration.
- Candidate should preferably have his Aadhaar Card Number handy.
- Candidates are to reach at the examination Centre with colour print out of provisional admit card. Candidates are liable to be debarred from appearing in the online test in case anomalies / irregularities/ incorrect information are observed during initial verification at the examination venue or at any subsequent stage of selection process.
- The candidate has to carry a valid ID proof whenever he reports for the selection test (Phase I & II) and medical test.
- Details about required educational qualification, physical/medical standards and job specification are available on CASB web portal www.airmenselection.cdac.in under the candidate's login and these information can be accessed by the candidate without signing in.
- PRESIDENT, CASB RESERVES THE RIGHT TO ALLOT EXAMINATION CENTRE FOR PHASE - I AND II WHICH MAY OR MAY NOT BE AS PER CHOICE OF THE CANDIDATE.**

Note - 4: Exact aggregate Percentage of marks before decimal as written in the marks sheet of 10+2/ Intermediate/Equivalent Examination/Three years Diploma Course OR calculated as per the rules of concerned Education Board/Polytechnic Institute will only be considered (For example 49.99% should be taken as 49% and not to be rounded off to 50%).

4. Mandatory Medical Standards

- General Medical Standards for both Group 'X' (Except Education Instructor Trade) and Group 'Y' (Except Automobile Technician, GTI, IAF (P), IAF(S) and Musician) Trades are as follows: -
 - Height:** Minimum acceptable height is 152.5 cms.
 - Chest:** Minimum range of expansion: 5 cm
 - Weight:** Proportionate to height and age. However, minimum weight of 55 Kg required for Operations Assistant (ATS) Trade only.
 - Corneal Surgery (PRK/LASIK)** is not acceptable.
 - Hearing:** Candidate should have normal hearing i.e. able to hear forced whisper from a distance of 6 meters with each ear separately.
 - Dental:** Should have healthy gums, good set of teeth and minimum 14 dental points.
 - Health:** Candidate should be free from medical or surgical deformity. He should be free from all communicable diseases and skin ailments. Candidate must be physically and mentally FIT to perform duty in any part of the world, in any climate and terrain.
 - Body Tattoo:** Permanent body tattoos are not permitted, however tattoos only on inner face of the fore arms (inside of elbow to the wrist), back (dorsal) part of the hand/reverse side of palm and Tribals with tattoos which are as per custom and traditions of their tribes may be considered. However, right to decide on acceptability/unacceptability of the individual rests with the Selection Centre. Candidates with permanent body tattoos are to submit two photographs (close up and distant view) with details of size and type of the Tattoo.
- Details of medical standards for various Groups/Trades are available on CASB web portal www.airmenselection.cdac.in

5. **Only Sikh candidates**, whose religion prohibits cutting of the hair or shaving of face of its member, will be permitted to grow hair and/or retain beard and moustache. Accordingly, those Sikh candidates willing to retain the same as per laid down specification are to get their photographs with beard and moustache.

6. Candidates discharged from Indian Army/Indian Navy/Any other Government Organisation are also eligible subject to their discharge with **NO ADVERSE ENTRIES**. Such candidate has to declare at the time of applying that he is an Ex-employee of the Organisation discharged from and produce original Discharge Certificate at the time of appearing for Phase-II Examination. In case of serving individuals they must be in possession of NOC from their employer at the time of appearing for Phase-II Examination. If any candidate does not disclose the fact of being employed or that of being an Ex-employee, his candidature will be cancelled at any stage during the selection process or at any subsequent stage. **Candidates discharged from Indian Air Force for any reason are not eligible to appear in Selection Test.**

TERMS AND CONDITIONS

7. **Tenure & Training.** Enrolment is for an initial period of 20 years extendable up to the age of 57 years (subject to service conditions). Initially candidates will be sent for a Joint Basic Phase Training (JBPT) at Basic Training Institute, Belagavi (Karnataka). On successful completion of JBPT, candidates will be allocated trades and sent for trade training of specified durations. Training is however liable to be terminated at any time if the trainee fails to achieve the required standards in academics, profession, physical fitness and discipline or is found to be medically unfit. **AFTER SUCCESSFUL COMPLETION OF TRAINING, THE AIRMEN WILL BE DEPLOYED ON JOBS AS PER THEIR ALLOTTED TRADES. ALLOTTED TRADE WILL NOT BE CHANGED ON CANDIDATE'S REQUEST ON ANY GROUNDS.**

8. **Job Specifications.** Details of Job specifications of various trades are available on CASB web portal www.airmenselection.cdac.in.

PAY & ALLOWANCES AND PERQUISITES

9. **Pay & Allowances.** During training, a stipend of Rs. 14,600/- per month will be paid. On completion of training the **starting gross emoluments at the minimum of scale of pay** including Military Service Pay (MSP), Group 'X' Pay {applicable for Group 'X' Trades only} and Dearness Allowance (DA) will be as follows:-

- Group 'X' Trades (Except Education Instructor Trade).** Rs.33,100/- per month plus Dearness allowance (as applicable) which, in subsequent years, may rise as per the career progression of the individual.
- Group 'Y' {Except Automobile Technician, GTI, IAF (P), IAF(S) and Musician} Trades.** Rs. 26,900/- per month plus Dearness allowance (as applicable) which, in subsequent years, may rise as per the career progression of the individual.

10. **Allowances.** In addition to the above, various allowances such as Transport Allowance, Composite Personal Maintenance Allowance (CPMA), Leave Ration Allowance (LRA), High Altitude Allowance, Field Area/Modified Field Area Allowance, HRA, Children Education Allowance/ Hostel Subsidy etc., are also admissible from time to time as applicable.

11. **Perks.** Perks such as Ration, Clothing, Medical facilities, Accommodation, CSD (Canteen) facilities, Leave (60 days Annual and 30 days Casual in a Calendar year as a privilege, subject to service exigencies), Recreational facilities, Transport facility for school going children and Leave Travel Concession (LTC) are also provided as per the existing rules. Also, **Group Insurance Cover of Rs. 37.5 Lakhs at a premium of Rs. 2300/- per month** is provided to all airmen and facility of Group Housing Scheme is also extended.

CAREER PROGRESSION AND POST RETIREMENT BENEFITS

12. **Promotion.** Promotion prospects exist up to the rank of Master Warrant Officer (MWO). Opportunities to become a Commissioned Officer also exist for those airmen who qualify the prescribed examinations, later during their service career.

13. **Higher Education** - Airmen are permitted to pursue higher educational qualification only after acquiring prescribed skill grade in their trade

1. **Indian Air Force** invites **ONLINE** application from **UNMARRIED MALE INDIAN CITIZENS** (citizens of Nepal are also eligible) for selection test on **10 & 11 MARCH 2018** to join as Airmen in **Group 'X' Trades (except Education Instructor Trade) and Group 'Y' {Except Automobile Technician, GTI, IAF (P), IAF(S) and Musician} Trades.**

(THE SELECTION TEST IS NOT FOR SELECTION AS COMMISSIONED OFFICERS/ PILOTS/ NAVIGATORS).

ELIGIBILITY CRITERIA

2. Date of Birth Block

- Candidate born between **13 January 1998** and **02 January 2002** (both days inclusive) are eligible to apply.
- In case, a candidate clears all the stages of the Selection Procedure, then the **upper age limit as on date of enrolment is 21 years.**

3. Educational Qualification

- Group 'X' (Except Education Instructor Trade).**
 - Passed **Intermediate/10+2/ Equivalent examination with Mathematics, Physics and English** with minimum 50% marks in aggregate and 50% marks in English.

OR

 - Passed **Three years Diploma Course in Engineering in any stream, as mentioned in the drop down menu of apply online section under candidate's login on the CASB web portal www.airmenselection.cdac.in.** The candidate should have completed the course from a **Government recognized Polytechnic institute with 50% marks in aggregate and 50 % marks in English in diploma or in Intermediate/Matriculation, if English is not subject in Diploma Course.**

(b) **Group 'Y' {Except Automobile Technician, GTI, IAF (P), IAF(S) and Musician} Trades.** Passed Intermediate / 10+2 / Equivalent Examination in any stream/subjects approved by Central / State Education Boards with minimum 50% marks in aggregate and 50% marks in English.

(c) **Group 'Y' Medical Assistant Trade Only.** Passed 10+2/Intermediate/ equivalent exam with Physics, Chemistry, Biology and English with a minimum of 50% marks in aggregate and 50% marks in English.

Note-1: Candidate eligible for Group X examination are also eligible for Group Y and would be given an option of appearing in both group X and Group Y exam in one sitting while filling up the online registration form.

Note - 2: Diploma holders are eligible to appear for Group X trades only.

Note - 3: Education Boards listed in Council of Boards for School Education (COBSE) website as members, as on date of registration will only be permitted.

SEQUENCE OF EXAMINATION

Phase – I

14. **Online Test {For both Group ‘ X’ Trades (except Education Instructor Trade)} & Group Y’ {except Automobile Technician, GTI, IAF(P), IAF(S) and Musician Trades}.** Eligible candidates will be sent Provisional Admit Cards for phase - I of testing on their respective **e-mail IDs** during the month of **February 2018** (which they will download & take colour printout & will carry the same to the examination centre on the day of online test as indicated on their respective Admit Cards) to appear in the Selection Test at the examination centres allotted to them. This provisional admit card can also be downloaded by the candidate under candidates login on CASB web portal www.airmenselection.cdac.in. All candidates in possession of provisional admit card will undertake Online Test as per their respective Group applied for, at Centres designated/allotted as per their admit card. Online test will be objective type and questions will be bilingual (English & Hindi) except for English paper. Online test for candidates opting for both Group X&Y shall be conducted in one sitting, on the same system. Candidates are to bring one blue/black pen and original valid ID proof along with them for Phase - I testing. A demonstration video on the conduct of online test is uploaded on the CASB web portal www.airmenselection.cdac.in. Details of the Test are as follows: -

- (a) **Group ‘X’ Trades.** Duration of the Online test will be **60 minutes** and will comprise of **English, Physics and Mathematics** as per 10+2 CBSE syllabus.
- (b) **Group ‘Y’ {Except Automobile Technician, GTI, IAF (P), IAF(S) and Musician} Trades.** Duration of the Online test will be **45 minutes** and will comprise of **English** as per 10+2 CBSE syllabus and **Reasoning & General Awareness (RAGA).**
- (c) **Both Group ‘X&Y’ Trades.** Duration of the Online test will be **85 minutes and will comprise of English, Physics, and Mathematics** as per 10+2 CBSE syllabus and **Reasoning & General Awareness (RAGA).**

15. **CANDIDATES ARE TO QUALIFY IN EACH PAPER SEPARATELY IN THEIR RESPECTIVE GROUPS.** The result of Phase-I will be uploaded on www.airmenselection.cdac.in within 15 days from the date of online exams.

Phase – II

16. Soon after the declaration of the result of Phase-I test, all candidates shortlisted for Phase II will be sent a new admit card on their registered e-mail ID for phase - II test at an Airmen Selection Centre. This admit card for phase – II exam can also be downloaded online under candidate’s login on CASB web portal www.airmenselection.cdac.in. Candidates have to report at the stipulated date and time for phase – II at the designated Airmen Selection Centre along with following documents:-

- (a) Colour print out of Admit Card for phase – II.
- (b) Colour Print out of duly filled application form downloaded on completion of online registration.
- (c) HB Pencil, Eraser, Sharpener, Glue stick, Stapler and Black/Blue Ball Point Pen for writing.
- (d) Ten copies of un-attested recent (which was used for the online application registration) passport size colour photograph.
- (e) **Original and four self-attested photocopies of Matriculation Passing Certificate (required for verification of Candidate’s Name, Father’s Name and his Date of Birth).**
- (f) Original and four self-attested photocopies of Matriculation Marks Sheet (only applicable for three years Diploma Course holders when English is not a subject in Diploma Course).
- (g) Original and four self-attested photocopies of Intermediate/10+2/ Equivalent Examination Passing Certificate and Marks Sheet.

OR

Original and four self-attested photocopies of Three years Diploma Course Passing Certificate and Marks Sheets of all semesters.

- (h) **Certificate for SOAFP (Son of Air Force Personnel), certificate for sons of serving/retired/deceased Air Force civilian employees paid out of defence estimates are to be downloaded as the case may be, from the download section of CASB web portal and brought along while reporting for phase –II of the examination.**
- (j) **For Candidates discharged from Indian Army/Indian Navy/Any other Government Organisation.** Original and four Self-attested photocopies of Discharge Certificate (as issued from Indian Army/Indian Navy/Government Organisation).
- (k) NOC in original and 4 self-attested photocopies from the employer for candidates presently serving in any government organization (if applicable).
- (l) Original and four self-attested photocopies of NCC ‘A’, ‘B’ or ‘C’ certificate (if applicable).

Note: Candidates discharged from Indian Air Force for any reason are not eligible to appear in the Selection Test.

17. **Verification of Eligibility.** Candidates should be in possession of the documents mentioned at para 16 above, when appearing for the Selection Test which would be scrutinised/verified prior to commencement of Phase – II to ascertain the eligibility prima-facie. Detailed verification of all the documents listed at para 16 above will be carried out in respect of candidates who pass Adaptability Test - 1. Candidature of those who do not meet the laid down educational criteria will be rejected during **Initial verification of original certificates & mark sheets** and also during **detailed verification at Airmen Selection Centre (ASC).**

Note-1: For SOAFP, the Name of the ward and his Date of Birth mentioned in the Discharge Book/Service Certificate must match with the details mentioned in his matriculation passing certificate.

Note-2: Under no circumstances the candidates will be permitted to appear in Phase – II of the Selection Test without Original Educational Marks Sheets/Passing Certificates & Documents mentioned above in paragraph 16 (e) to (k). However, candidates with photocopies of Educational Marks Sheets/Passing Certificates can be permitted to appear in the Selection Test only on production of a certificate from College/School Principal certifying that Educational Certificates/Marks sheets are deposited with College/School.

Note-3: The original Passing Certificates/Marks Sheets will not be retained by the Selection Centre. The same will be returned to the candidates on completion of detailed verification.

Note-4: Internet copy of marksheet not acceptable.

18. **Physical Fitness Test (PFT)** Candidates who pass Online Test and are shortlisted as per merit which will be displayed on the CASB Web Portal www.airmenselection.cdac.in on a stipulated date will be called at designated Airmen Selection Centre for Physical Fitness Test (PFT) which would consist of 1.6 Km run to be completed within 06 minutes and 30 seconds. Candidates will also have to complete 10 push-ups, 10 sit-ups and 20 squats within the stipulated time to qualify in the Physical Fitness Test.

Note: Candidates are advised to bring their **sports shoes and shorts/Track pants.**

19. **Adaptability Test-1 (For both Group ‘ X’ & Group ‘Y’ Trades)** All candidates who pass the Physical Fitness Test (PFT) will have to undertake Adaptability Test-1 (objective type written test) which is to assess suitability of a candidate for employment in the IAF which involves deployment in varied geographic terrain, weather and operational conditions.

20. **Adaptability Test-2 (For both Group ‘ X’ & Group ‘Y’ Trades).** All candidates who pass Adaptability Test -1 will have to undertake Adaptability Test-2 as per policy in vogue. Adaptability Test-2 is to select candidates who can adapt to the environment of Indian Air Force and are able to adjust to the military way of life.

Note: Candidates qualifying for both Group X and Group Y will be allotted the group according to their merit as well as preference given by the candidate at the time of filling up of online application. However, President, CASB reserves the right to allocate Group to a candidate as per vacancies available.

Phase - III

21. **Medical Examination.** Candidates who qualify Adaptability Test-2 will be issued with medical appointment letter at respective ASCs. It can also be downloaded under candidates login on CASB web portal www.airmenselection.cdac.in for their medical examination at designated **Medical Board Centre (MBC) on specified date.** Medical Examination will be conducted by Air Force Medical Team as per IAF medical standards and policy in vogue on subject issue. Medical examination would also include Baseline Investigation of:-

- (a) Blood Haemogram - Hb, TLC, DLC
- (b) Urine RE/ME
- (c) Biochemistry
 - (i) Blood Sugar Fasting & PP
 - (ii) Serum Cholesterol
 - (iii) Urea, Uric acid, Creatinine
 - (iv) LFT—Serum Bilirubin, SGOT, SGPT
- (d) X- Ray chest (PA view)
- (e) ECG (R)

Note. Candidates are advised to get tartar and stains removed from their teeth before appearing for the Medical Examination. Ears should be free of wax. Candidates should be prepared to stay for the medical test for four to five days under their own arrangement. No TA/DA will be admissible. Candidates using corrective glasses must be in possession of prescription from ophthalmologist bearing stamp and registration number and should not be more than one month old. Passing in the medicals is not a guarantee for the employment in Indian Air Force.

GENERAL

22. **General instructions for candidates are as follows:-**

- (a) Candidates must indicate five choices of examination centre and three choices of ASCs in order of preference while filling up the online application form. However, Central Airmen Selection Board reserves the right to allot any centre other than those mentioned in the application.
- (b) **REQUESTS FOR CHANGE OF EXAMINATION CENTRE OR DATE OF SELECTION TEST WILL NOT BE ENTERTAINED.**
- (c) Candidates not reporting for the test on due date and time will not be accommodated on other dates/shifts.
- (d) Duplicate / Incomplete / erroneously filled applications will be **rejected.**
- (e) **Candidates should be prepared to stay for the entire duration of the tests** under their own arrangement. **No TA/DA will be admissible.**
- (f) In case, a candidate clears all the stages of Selection Procedure then the **upper age limit as on date of enrolment is 21 years.**
- (g) Candidate should apply only once in response to this advertisement.
- (h) Candidature of candidates who applies **MORE THAN ONCE IN RESPONSE TO THIS ADVERTISEMENT AND OBTAINS** different registration numbers for Group ‘X’, Group ‘Y’ or both, **WILL BE REJECTED.**

23. If there is any variation between English & Hindi/any other regional language versions of the advertisement, English version may be taken as authentic.

24. Any CORRIGENDUM/CHANGES/UPDATES shall be available ONLY on CASB webportal www.airmenselection.cdac.in and NO INTIMATION SHALL BE GIVEN IN ANY NEWS PAPER/ANY OTHER MEDIA. All candidates are required to see the website of this office from time to time.

HOW TO APPLY

25. Online registration for the Selection Test will be available from **15 DECEMBER 2017** on www.airmenselection.cdac.in and will close on **12 JANUARY 2018.** Detailed instructions on how to register/fill-up application form are available on the website. Candidates are to strictly follow the given instructions.

26. **PROVISIONAL SELECT LIST (PSL).** THE PSL WILL BE PREPARED AFTER THE COMPLETION OF SELECTION TEST AND THE SAME WILL BE DISPLAYED AT ALL THE AIRMEN SELECTION CENTRES (ASCs) AND WEBSITES www.airmenselection.cdac.in and www.careerindianairforce.cdac.in ON 31 OCTOBER 2018. INCLUSION OF NAMES OF CANDIDATES IN THE PSL DEPENDS UPON THE PERFORMANCE OF THE CANDIDATES IN THE EXAM AND ALSO SUBJECT TO MEDICAL FITNESS. INCLUSION OF NAME IN PROVISIONAL SELECT LIST (PSL) DOES NOT GUARANTEE AUTOMATIC ENROLMENT. ENROLMENT IS STRICTLY IN ORDER OF MERIT SUBJECT TO MEDICAL FITNESS, AVAILABILITY OF VACANCIES, NOT EXCEEDING THE AGE OF 21 YEARS ON DATE OF ENROLMENT AND MEETING ALL THE LAID DOWN ELIGIBILITY CRITERIA AS AND WHEN CALLED FOR ENROLMENT. THE VALIDITY OF THE PSL WILL BE 06 MONTHS FROM THE DATE OF DISPLAY AND WILL BE APPLICABLE ONLY FOR INTAKE/ENTRY 01/2019.

ENROLMENT LIST – List of candidates finally called for enrolment in intake 01/2019 will be published on 10 December 2018. Separate call letter will be sent to the candidates called for enrolment.

ONLINE REGISTRATION BY UNMARRIED MALE CANDIDATES FOR SELECTION AS AIRMEN IN INDIAN AIR FORCE

Eligible candidates to log on to www.airmenselection.cdac.in or www.careerindianairforce.cdac.in for online registration and guidelines for filling up the form online between 15 December 17 to 12 January 2018.

FOR ANY QUERY CONTACT, PRESIDENT, CENTRAL AIRMEN SELECTION BOARD, BRAR SQUARE, DELHI CANTT, NEW DELHI – 110010, TELEPHONE NO. 011- 25694209 /25699606 AND E-MAIL : casbiaf@cdac.in OR LOG ON TO CASB WEB PORTAL www.airmenselection.cdac.in UNDER CANDIDATE’S LOG IN. FOR QUERIES PERTAINING TO FILLING UP OF ONLINE APPLICATION FORM, CANDIDATES MAY ALSO CONTACT ON TELEPHONE No. 020-25503105/ 25503106.

FOR CAREER DETAILS, PROMOTION PROSPECTS, POST RETIREMENT BENEFITS, DETAILED SYLLABUS, MODEL QUESTION PAPERS, PROVISIONAL SELECT LIST AND ENROLMENT LIST, LOG ON TO CENTRAL AIRMEN SELECTION BOARD WEB PORTAL : www.airmenselection.cdac.in

DISCLAIMER

The terms and conditions given in the advertisement are guidelines only and orders issued by the Government as amended from time to time will apply for the selected candidates.

SKYBE ACADEMY, BARMER

N.H. 15, Jaisalmer Raod, Opp. Balaji Hospital,

Near Bajrang Dharm Kanta, Baldev Nagar, Barmer(344001)

Call or Whatsapp- 9461404444 or 8989203520

SYLLABUS FOR GROUP 'X' (TECHNICAL)

ENGLISH

I. Comprehension

A small passage followed by questions.

1. To judge comprehension
2. Drawing of inferences
3. Use of vocabulary

II Composition

1. Agreement of subject with verb
2. Pattern of verb and their use.
3. Sequence of tenses.
4. Transformation of sequences-Compound, Complex, Simple, Negative, Affirmative.

III Grammar

1. Spellings
2. Word formation
3. Antonyms and Synonyms
4. One word substitution
5. Correct usage of articles
6. Correct usage of Prepositions
7. Correct usage of adjectives-degrees of comparison
8. Correct usage of conjunctions
9. Correct usage of Nouns and Pronouns
10. Correct usage of numbers (Singular-Plural)
11. Words, which are commonly getting confused
12. Word order
13. Correct usage of Adverbs

IV. Idioms and Phrases

1. Use of simple idioms
2. Use of Common proverbs

V. Direct / Indirect sentences : Narration change

1. Change of various types of sentences from direct to indirect form
2. Change of various types of sentences from indirect to direct form

VI. Active and Passive Voices

1. Change of all types of sentences from active to passive form
2. Change of all types of sentences from passive to active form

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<u>PHYSICS</u>	<u>MATHEMATICS</u>
<ol style="list-style-type: none">1. Physical World & Measurement2. Kinematics3. Laws of Motion4. Work, Energy & Power5. Motion of System of particles & Rigid Body6. Gravitation7. Properties of Bulk Matter8. Thermodynamics9. Behaviour of Perfect Gas & Kinetic Theory of gases10. Oscillations & Waves11. Electrostatics12. Current Electricity13. Magnetic effect of current & Magnetism14. Electromagnetic Induction and Alternating current15. Electromagnetic Waves16. Optics17. Dual Nature of Matter18. Atoms and Nuclei19. Electronic Devices20. Communication Systems	<ol style="list-style-type: none">1. Sets, Relations, functions2. Trigonometric functions3. Inverse Trigonometric functions4. Complex Numbers5. Quadratic Equations6. Sequence & Series (AP & GP)7. Permutation8. Combination9. Binomial Theorem10. Coordinate geometry – Straight line11. Coordinate geometry – Circles12. Coordinate geometry – Parabola13. Coordinate geometry – Ellipse14. Coordinate geometry – Hyperbola15. Exponential Series16. Logarithmic Series17. Matrices18. Determinants19. Limit & Continuity20. Differentiation21. Application of Differentiation22. Indefinite Integrals23. Definite Integrals24. Application of Integration25. Deferential Equations26. Probability27. Statistics

visit our website- www.skybe.in

write us- support@skybe.in or skybeacadmy@gmail.com

Call or Whatsapp- 9461404444 or 8989203520

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Near Bajrang Dharm Kanta, Baldev Nagar, Barmer(344001)

MODEL QUESTIONS

ENGLISH

[FOR BOTH GROUP 'X'(TECHNICAL) & GROUP 'Y'TRADES]

Select the correct verb

- Q1. Besides his parents, he _____ also present at the function.
(A) is (B)was (C)has (D) has been
Ans :B

Identify the correct preposition

- Q2. The thunder was accompanied _____ a heavy rain.
(A)from (B)by (C)up (D)through
Ans :B

Choose the misspelt word.

- Q3. (A) disparity (B)illusion (C)inevitable (D)middle
Ans :A

Fill in the blank with correct article.

- Q4. _____ things of beauty is a joy forever.
(A)the (B)a (C)an (D)none of these
Ans :A

Identify the antonym of the given word

- Q.5 Embellish
(A)Sacrifice (B)Disfigure (C)Foreit (D)Indict
Ans :B

Give one word substitute

- Q6. A well experienced person.
(A)wise man (B) Intelligent (C) Old man (D) Veteran
Ans :D

Q7. An accident which results in death

- (A) Injurious (B) Dangerous (C)Fatal (D) Terrible
Ans : C

Identify the correct choice

- Q8. He has purchased a bag of _____
(A)floor (B)flour (C)flower (D)flaur
Ans :B

Identify the synonym of the given word

- Q9. Zest
(A)pleasure (B)distaste (C)flop (D)encircles
Ans :A

Fill in the blank with suitable conjunction

- Q10. He will never pass, _____ hard he may try
(A) However (B) Whatever (C) Never (D) Whenever
Ans :A

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Form an adjective from the given word

Q11. Gold

- (A)The Gold (B)Golder (C) Golden (D)Goldest

Ans : C

Give the plural of the given word

Q12. Hero

- (A) Heroine (B) Heros (C) Heroies (D) Heroes

Ans :D

Fill in the blank with suitable word

Q13. Barking dogs ____bite

- (A) regularly (B)rarely (C)seldom (D)frequently

Ans :C

Identify the incorrect part

Q14. No boy in his son's class is as bright as his son is

- A B C D

Ans :D

Identify the meaning of the given idioms/phrases

Q15. To live in fool's paradise

- (A)to have an absolutely false conception (B)to create a stir
(C)to be clear (D)to get fairly involved

Ans :A

Identify the indirect speech

Q16. The teacher said to me, "Be regular and learn your lesson daily" The teacher:

- (A) told me that to be regular and learn my lesson daily
(B) said to me regular and learn my lesson daily
(C)advised me to be regular and learn my lesson daily
(D) request me to be regular and learn lesson daily

Ans :C

Change the voice

Q17. It is time to buy books.

It is time_____

- (A) all the books to be bought
(B) for the books to be bought
(C) for books have been bought
(D) for books are being bought

Ans :B

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Read the following passage and answer Q No.18 to 20

“A man who has no sense of history”, Hitler declared, “is like a man who has no ears or eyes”. He himself claimed to have had a passionate interest in history since his school days and he displayed considerable familiarity with the course of European history. His conversation was studied with historical references and historical parallels. More than that, Hitler's whole cast of thought was historical, and his sense of mission was derived from his sense of history. Like his contemporary Spangler, Hitler was fascinated by the rise and fall of civilisations. He was himself born at a critical moment in European history when the liberal bourgeois world of the nineteenth century was disintegrating. What would take its place? The future lays with the 'Jew-Bolshevik' ideology of the masses unless Europe could be saved by the Nazi racist ideology of the elite.

Q18. Who has no ears or eyes?

- (A) A man having sense of history
- (B) A man who has no sense of history
- (C) A man who has extra knowledge
- (D) A man having passionate interest in history

Ans :B

Q19. Hitler displayed familiarity with:

- (A) Scientific facts
- (B) Indian history
- (C) European history
- (D) None of these

Ans :C

Q20. Hitler's sense of mission was derived from :

- (A) His love of mankind
- (B) his sense of history
- (C) Nowhere
- (D) contemporary society

Ans :B

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MODEL QUESTIONS - PHYSICS

Q1. निम्न में से कौन सी मौलिक राशि है ।

Which of the following is the fundamental quantity ?

(A) आयतन/Volume (B) वेग/ Velocity (C) समय/Time (D) बल/Force

Ans : C

Q2. एक गेंद 15 मीटर प्रति सेकण्ड के वेग से क्षैतिज से 30° का कोण बनाते हुए फेंकी जाती है । गेंद की उड़ान का समय ज्ञात कीजिये । दिया है 10 मीटर सेकेंड ।

A ball is projected with a velocity of 15 m/s making an angle of 30° with the horizontal. Calculate the time of flight of the ball (Give $g = 10 \text{m/s}^2$)

(A) 1.5 Second (B) 3.5 Second (C) 2 Second (D) 5 Second

Ans: A

Q3. निम्न में से किसका विमीय सूत्र आवेग के विमा सूत्र के समान है ।

The dimension formulas for impulse is same as the dimensional formula for

(A) संवेग/Momentum (B) बल/Force

(C) बल आघूर्ण/Torque (D) संवेग में परिवर्तन की दर/Rate of change of momentum

Ans : A

Q4. यदि एक सार्व आधारित प्रबंधक में संग्राही आधारित बैटरी है संग्राही परिपथ में धारा है संग्राही परिपथ में जोड़ा हुआ प्रतिरोध है और संग्राही और आधार की चार वोल्टता है तो :

For a common base amplifier, V is the collector base battery, I_c the current in the collector circuit, R_L the resistance connected in collector circuit and V_{cb} the voltage across collector & base, then

(A) $V_{cb} = V_{cc} + I_c R_L$

(B) $V_{cb} = V_{cc} - I_c R_L$

(C) $V_{cc} = V_{cb} - I_c R_L$

(D) इनमें से कोई नहीं /None of these

Ans : A

Q5. सार्वत्रिक गैस नियतांक की एम आई इकाई है :

The SI unit of Universal Gas constant (R) is :

(A) $\text{Watt k}^{-1} \text{mol}^{-1}$

(B) $\text{NK}^{-1} \text{mol}^{-1}$

(C) $\text{JK}^{-1} \text{mol}^{-1}$

(D) $\text{erg K}^{-1} \text{mol}^{-1}$

Ans : C

Q6. दो पतली और असीमित समान्तर पट्टिकाओं पर समान घनत्व के $+\sigma$ और $-\sigma$ आवेश हैं अन्तरिक्ष में उनके मध्य का विद्युत क्षेत्र क्या है ।

Two thin and infinite parallel plates have uniform densities of charge $+\sigma$ and $-\sigma$. What is the electric field in the space between these plates?

(A) $\sigma/2\epsilon_0$

(B) σ/ϵ_0

(C) $2\sigma/\epsilon_0$

(D) शून्य / Zero

Ans : B

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Q7. अज्ञात द्रव्यमान के एक पदार्थ पर 70N का बल कार्य कर उसे 20 मी प्रति वर्ग सेकण्ड का त्वरण देता है । वस्तु का द्रव्यमान है _____ ।

A force of 70N gives an object of unknown mass an acceleration of 20m/s^2 .

The mass of unknown object is _____.

(A) 7 Kg (B) 0.3 Kg (C) 3.5 Kg (D) 35 Kg

Ans : C

Q8. जीनर डायोड का उपयोग किया जाता है :

Zener- diode is used as :

(A) एक प्रवर्धक/An amplifier
(B) एक दिष्टकारी के रूप में /An rectifier
(C) एक दोलन कारी के रूप में /An oscillator
(D) एक विभव नियंत्रक के रूप में /A Voltage regulator

Ans : D

Q9. 50 मोड़ों की एक कुण्डली से चुम्बकीय फलक्स 0.05 वेबर प्रति सेकण्ड की दर से बढ़ता है । कुण्डली के सिरों के मध्य उत्पन्न विद्युत वाहक बल कितना है ।

The magnetic flux through a 50- turn coil increase at the rate of 0.05 Wb/s .

What is the induced emf between the ends of the coil?

(A) 2.5V (B) 5V (C) 3V (D) 7V

Ans : A

Q10. एक टेलिस्कोप के अभिदृश्यक की फोकस दूरी 60 से मी है तो 20 का आवर्धन पाने के लिए नेत्रिका की फोकस दूरी कितनी होनी चाहिए ।

The focal length of objective of a telescope is 60 c.m. To obtain a magnification of 20, the focal length of the eye-piece should be

(A) 2cm (B) 5cm (C) 4cm (D) 3cm

Ans : D

Q11. निम्न में से कौन सी व्युत्पन्न इकाई है ।

Which of the following is a derived unit?

(A) द्रव्यमान/Mass (B) लम्बाई/Length (C) समय/Time (D) वेग /Velocity

Ans : D

Q12. परमाणु बम _____ के सिद्धान्त पर आधारित है ।

Atomic bomb is based on the principle of _____

(A) नाभिकीय विखंडन /Nuclear Fission (B) नाभिकीय संलयन /Nuclear Fusion
(C) नाभिकीय संक्रमण /Nuclear Transition (D) रेडियो उत्सर्जन /Radio Emission

Ans: A

Q13. एक भारहीन रबड़ के गुब्बारे में 100 ग्राम जल है । जल में उसका वजन होगा ।

A weightless rubber balloon has 100gm of water in it. Its weight in water will be

(A) 100gm (B) 200gm (C) 50gm (D) शून्य/Zero

Ans : D

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Q14. यदि द्रव्यमान पर कार्य करता बल त्वरण उत्पन्न करता है तो न्यूटन के गति के दूसरे सिद्धान्त के अनुसार :
If a force 'f' action on a mass 'm' produces acceleration 'a' then as per Newton's second law of motion :

- (A) $f = ma$ (B) $f = a/m$ (C) $f = m/a$ (D) $m = af$

Ans : A

Q15. तीन संधारित्र जिनकी धारिता $1 \mu F$, $2 \mu F$ तथा $6 \mu F$ है श्रृंखला क्रम में जोड़े गये है इस संयोजन की समकक्ष धारिता _____ है ।

The three capacitors whose capacitances are $1 \mu F$, $2 \mu F$ and $6 \mu F$ are connected in a series. The equivalent capacitance of the combination is _____

- (A) $2/5 \mu F$ (B) $3/5 \mu F$ (C) $1/3 \mu F$ (D) $1/5 \mu F$

Ans : B

Q16. LCR परिपथ में वैकल्पिक धारा अधिकतम होती है जब _____ ।

The alternating current in LCR circuit is maximum when _____

- (A) $X_L = 0$ (B) $X_C = 0$ (C) $X_L = X_C$ (D) $X_L^2 + X_C^2 = 1$

Ans : C

Q17. कारनॉट इंजन के क्षमता जो जल के क्वथनांक तथा गलनांक के मध्य काम कर रहा है होगी

The efficiency of a Carnot engine working between the steam point and ice point is

- (A) 28.8 % (B) 27.8 % (C) 26.8 % (D) 23.8 %

Ans : C

Q18. रेलवे पटरियां मोड़ों पर झुकी होती है ताकि

Railway tracks are banked on curves so that

(A) पटरी और पहियों के बीच कोई घर्षण बल पैदा न हो /No frictional force may be produced between the tracks and wheels

(B) रेलगाड़ी अन्दर की ओर न गिरे /The train may not fall down inward

(C) पटरी के कारण सामान्य प्रतिक्रिया के क्षैतिज घटक से आवश्यक अभिकेन्द्र बल प्राप्त किया जा सके

/Necessary centripetal force may be obtained from the horizontal component of normal reaction due to the track

(D) इनमें से कोई नहीं /None of the above

Ans : C

Q19. दूर संचार में प्रयोग में लाई जाने वाली विद्युतचुम्बकीय तरंगें _____ होती है ।

The electromagnetic waves used in the telecommunication are _____.

(A) पराबैंगनी/Ultraviolet

(B) अवरक्त/Infra-red

(C) दृश्यक/Visible

(D) सूक्ष्म तरंगें /Microwave

Ans : D

Q20. 60 किलोग्राम वजन का एक बालक जो कि 10 मीटर प्रति सेकंड की गति से दौड़ रहा है का संवेग ___ होगा ।

The momentum of a boy of 60 Kg weight running at 10 m/s is _____

(A) 500 Kg m/s

(B) 600 Kg m/s

(C) 550 Kg m/s

(D) 450 Kg m/s

Ans : B

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- Q21. जब एक वायुयान लूप बना रहा होता है तो चालक गिरता नहीं है क्योंकि उसका वजन आवश्यक प्रदान करता है :
When an aero plane is making a loop, pilot does not fall down because his weight provides the necessary
- (A) गुरुत्व के विपरीत बल/Force against gravity
(B) अभिकेन्द्री बल/Centripetal force
(C) अपकेन्द्री बल/Centrifugal force
(D) श्यान बल /Viscous force

Ans : B

- Q22. 70 कि ग्राम द्रव्यमान की वस्तु पर 350 N का शुद्ध बल कार्य करता है जो कि प्रारम्भ में स्थिर अवस्था में है । इसका त्वरण _____ होगा ।
A net force of 350 N acts on a body of mass 70 Kg which is initially at rest. Its acceleration is _____ m/s^2 .
- (A) 3 (B) 7 (C) 5 (D) 9

Ans : C

- Q23. ध्वनि के दो स्रोत अनुनाद में तब होते हैं :
Two sources of sound are said to be in resonance, when
- (A) जब वे एक जैसे लगते हैं/They look like similar
(B) जब वे एक समान आवृत्ति की ध्वनि उत्पन्न करते हैं /They produce sound of same frequency
(C) जब वे एक दूसरे से विशेष दूरी पर स्थित होते हैं /They are situated at a particular distance from each other
(D) जब वे एक ही स्रोत द्वारा उत्पन्न होते हैं । /They are produced by same source

Ans : B

- Q24. जैसे जैसे हम पृथ्वी के तल से ऊपर की ओर जाते हैं तो गुरुत्व के कारण त्वरण घटता है तो पृथ्वी के तल से नीचे जाने पर यह :
Acceleration due to gravity decreases as we go up from the surface of the earth. Then in going below the surface of the earth it
- (A) बढ़ता है/Increases
(B) घटता है/Decreases
(C) स्थिर रहता है /Remains constant
(D) घटता है फिर बढ़ता है/Decreases then increases

Ans : B

- Q25. पृथ्वी के वायुमंडल पर ओजोन की परत :
Ozone layer above earth's atmosphere will
- (A) सूर्य के अवरक्त विकिरण से बचाएगी/Prevent infra-red radiation from sun
(B) पृथ्वी से परावर्तित अवरक्त किरणों से पृथ्वी के वायुमंडल को बचाएगा /Infra-red rays reflected from earth from escaping earth's atmosphere
(C) सूर्य से पराबैंगनी किरणों को बचाएगा /Prevent ultraviolet rays from sun
(D) रेडियो तरंगों को वापिस परावर्तित करेगा /Reflect back radio waves

Ans : C

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MODEL QUESTIONS - MATHEMATICS

Q1 मान लो $A = \{x : x, 3 \text{ का गुणज है}\}$ और $B = \{x : x, 5 \text{ का गुणज है}\}$ तो $A \cap B$ दिया गया है :
Let $A = \{x : x \text{ is a multiple of } 3\}$ and $B = \{x : x \text{ is a multiple of } 5\}$. Then

$A \cap B$ is given by

(A) $\{3, 6, 9, \dots\}$

(B) $\{5, 10, 15, 20, \dots\}$

(C) $\{15, 30, 45, \dots\}$

(D) इनमे से कोई नहीं / None of these

Ans : C

Q2 $\sin 15^\circ$ का मान _____ के बराबर होगा। / The value of $\sin 15^\circ$ is equal to _____

(A) $\frac{\sqrt{3}-1}{2\sqrt{2}}$

(B) $\frac{\sqrt{3}+1}{2\sqrt{2}}$

(C) $\frac{\sqrt{3}-1}{\sqrt{2}}$

(D) $\frac{\sqrt{3}+1}{\sqrt{2}}$

Ans : A

Q3 यदि $P(n)$ कथन “ $n(n+1)(n+2)$, 12 द्वारा भाज्य है” तो $P(3)$ क्या है ?

If $P(n)$ is the statement “ $n(n+1)(n+2)$ is divisible by 12”, then what is $P(3)$?

(A) 12 द्वारा 12 भाज्य है / 12 is divisible by 12

(B) 12 द्वारा 24 भाज्य है / 24 is divisible by 12

(C) 12 द्वारा 48 भाज्य है / 48 is divisible by 12

(D) 12 द्वारा 60 भाज्य है / 60 is divisible by 12

Ans : D

Q4 $\frac{1+2i}{1-(1-i)^2}$ का परिमाण _____ है। / The modulus of $\frac{1+2i}{1-(1-i)^2}$ is _____.

(A) 1

(B) 3

(C) 5

(D) 2

Ans : A

Q5 समीकरण $5^{2x} - 5^{x+3} + 125 = 5^x$ का हल _____ है।

Solution of the equation $5^{2x} - 5^{x+3} + 125 = 5^x$ is _____.

(A) $x = 0, 3$

(B) $x = 1, 3$

(C) $x = 0, 4$

(D) $x = 2, 3$

Ans: A

Q6 एक त्रिभुज के शीर्ष बिन्दु $(0, 0)$, $(3, 0)$ और $(0, 4)$ हैं त्रिभुज का केन्द्रक ज्ञात करें।

The vertices of a triangle are $(0, 0)$, $(3, 0)$ and $(0, 4)$. The centroid of the triangle is

(A) $(1/2, 2)$

(B) $(1, 4/3)$

(C) $(0, 0)$

(D) इनमे से कोई नहीं/

None of these

Ans : B

Q7 $x^2 + y^2 - px + 3y - 7 = 0$ और $x^2 + y^2 - 16x - 9py - 4 = 0$ वृत्त लंबकोणीय काटते हैं तो p का मान _____ होगा।

The value of p for which the circles $x^2 + y^2 - px + 3y - 7 = 0$ and $x^2 + y^2 - 16x - 9py - 4 = 0$ cut orthogonally is _____.

(A) 3

(B) 1

(C) 2

(D) 4

Ans : C

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- Q8 एक परवलय जिसकी नाभि $(-3, 0)$ और नियता $x + 5 = 0$ है उसका समीकरण _____ है ।
The equation of a parabola whose focus is $(-3, 0)$ and the directrix is $x + 5 = 0$, is _____
(A) $x^2 = 4(y - 4)$ (B) $x^2 = 4(y + 5)$ (C) $y^2 = 4(x - 4)$ (D) $y^2 = 4(x + 4)$

Ans : D

- Q9 यदि $(x/3 - 2/x^2)^{10}$ के विस्तार में r वां पद में x^4 है तो r बराबर है :
If the r^{th} term in the expansion of $(x/3 - 2/x^2)^{10}$ contains x^4 , then r is equal to
(A) 2 (B) 3 (C) 4 (D) 5
Ans : B

- Q10 एक समान्तर श्रेणी में समदूरी के पदों का योग प्रारम्भ और अन्त से किसके बराबर है ?
In an A.P the sum of terms equidistant from the beginning and end is equal to _____.
(A) पहला पद / First term (B) दूसरा पद / Second term (C) पहले और अंतिम पद का योग / sum of first and last terms
(D) अंतिम पद/ last term
Ans : C

- Q11 A अक्षर का तीन बार, अक्षर B का दो बार और अक्षर C का एक बार प्रयोग कर कितने शब्द बनाये जा सकते हैं ?
How many words can be formed using the letter A thrice, the letter B twice and the letter C once ?
(A) 50 (B) 60 (C) 55 (D) 40
Ans : B

- Q12 $e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots \infty$, _____ के लिए मान्य है / is valid for ____.
(A) $-1 < x < 1$ (B) $-1 \leq x \leq 1$
(C) सभी वास्तविक x / all real x (D) इनमें से कोई नहीं / None of these
Ans : C

- Q13 यदि / If $A = \begin{pmatrix} 3 & 4 & 5 \\ 6 & 7 & 8 \end{pmatrix}$ और /and $B = \begin{pmatrix} 1 & 2 & -3 \\ 4 & 5 & 6 \end{pmatrix}$ तो / then $2A + 3B = ?$
(A) $\begin{pmatrix} 10 & 14 & 1 \\ 24 & 29 & 34 \end{pmatrix}$ (B) $\begin{pmatrix} 9 & 14 & 1 \\ 24 & 29 & 34 \end{pmatrix}$
(C) $\begin{pmatrix} 9 & 14 & 11 \\ 24 & 29 & 34 \end{pmatrix}$ (D) इनमें से कोई नहीं/ None of these
Ans : B

- Q14 सारणिक / Determinant $\begin{vmatrix} x+y & y+z & z+x \\ z & x & y \\ 1 & 1 & 1 \end{vmatrix}$ का मान है / is equal to
(A) -1 (B) 1 (C) 2 (D) 0
Ans : D

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Q15 सीमा $\lim_{x \rightarrow \frac{\pi}{2}} \frac{e^{\sin x} - 1}{\sin x}$ समान है / $\lim_{x \rightarrow \frac{\pi}{2}} \frac{e^{\sin x} - 1}{\sin x}$ is equal to _____.

- (A) $e - 1$ (B) $e + 1$ (C) e (D) $e + 2$

Ans : A

Q16 λ नियतांक का मान ज्ञात करें ताकि नीचे दिया गया फलन, $x = -1$ पर संतत हो।

Find the value of the constant λ so that the function given below is continuous at

$$x = -1: \quad f(x) = \begin{cases} \frac{x^2 - 2x - 3}{x + 1}, & x \neq -1 \\ \lambda, & x = -1 \end{cases}$$

- (A) -4 (B) 4 (C) 3 (D) -3

Ans : A

Q17 $\frac{d}{dx}(e^{\cos x}) =$ _____

- (A) $\sin x e^{\cos x}$ (B) $-\sin x e^{\cos x}$
(C) $\cos x e^{\cos x}$ (D) इनमें से कोई नहीं/None of these

Ans : B

Q18 $\frac{d}{dx}(\tan^{-1} \log x) =$ _____

- (A) $\frac{1}{x[1 + (\log x)^2]}$ (B) $\frac{-1}{x[1 + (\log x)^2]}$
(C) $\frac{1}{x[1 - (\log x)^2]}$ (D) इनमें से कोई नहीं/None of these

Ans : A

Q19 एक गुब्बारे की त्रिज्या 10 से मी प्रति सेकण्ड की दर से बढ़ रही है। जब त्रिज्या 15 से मी है तो गुब्बारे का पृष्ठीय क्षेत्रफल किस दर से बढ़ रहा है ?

The radius of a ballon is increasing at the rate of 10 cm/sec. At what rate is the surface area of the ballon increasing when the radius is 15 cm?

- (A) 1200π वर्ग सेमी प्रति से / $1200 \pi \text{ cm}^2/\text{sec}$
(B) 120π वर्ग सेमी प्रति से / $120 \pi \text{ cm}^2/\text{sec}$
(C) 150π वर्ग सेमी प्रति से / $150 \pi \text{ cm}^2/\text{sec}$
(D) 1500π वर्ग सेमी प्रति से / $1500 \pi \text{ cm}^2/\text{sec}$

Ans : A

Q20 वह अन्तराल ज्ञात करें जिसमें $f(x) = 2x^3 - 3x^2 - 36x + 7$ यथातथ्य घट रहा है।

The interval in which the function $f(x) = 2x^3 - 3x^2 - 36x + 7$ is strictly decreasing is :

- (A) $(-2, 3)$ (B) $(-\infty, -2)$
(C) $(3, \infty)$ (D) इनमें से कोई नहीं/None of these

Ans : A

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- Q21 (0, 0) पर $y = \sin x$ वक्र के अभिलम्ब का समीकरण होगा :
The equation of the normal to the curve $y = \sin x$ at (0, 0) is
(A) $x = 0$ (B) $y = 0$ (C) $x + y = 0$ (D) $x - y = 0$
Ans : C

- Q22 $\int \frac{\sin(\tan^{-1} x)}{1+x^2} dx =$ _____.
(A) $\cos x (\tan^{-1} x) + C$ (B) $-\cos x (\tan^{-1} x) + C$
(C) $2x \cos x (\tan^{-1} x) + C$ (D) $-2x \cos x (\tan^{-1} x) + C$
Ans : B

- Q23 सरल रेखा $2y = 3x + 12$ द्वारा परवलय $4y = 3x^2$ के काटे गये भाग का क्षेत्रफल _____ वर्ग मात्रक है।
The area cut off the parabola $4y = 3x^2$ by the straight line $2y = 3x + 12$ in sq units is:
(A) 16 (B) 21 (C) 27 (D) 36
Ans : C

- Q24 वक्रों के परिवार $y = e^x (A \cos x + B \sin x)$ जहाँ A और B स्वेच्छ अचर हैं, का अवकल समीकरण _____ है।
The differential equation of the family of curves $y = e^x (A \cos x + B \sin x)$, where A and B are arbitrary constants, is:
(A) $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + 2y = 0$ (B) $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} - 2y = 0$
(C) $\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 + y = 0$ (D) $\frac{d^2y}{dx^2} - 7\frac{dy}{dx} + 2y = 0$
Ans : A

- Q25 एक पाँसा तथा एक सिक्का एक साथ उछाले जाते हैं। पाँसे पर 6 तथा सिक्के पर चित्त आने की संभाव्यता ज्ञात करें।
One die and one coin are tossed simultaneously. The probability of getting 6 on die and head on coin is
(A) $1/2$ (B) $1/6$
(C) $1/12$ (D) इनमे से कोई नहीं/None of these
Ans : C