CLASS 12

SOF OLYMPIADS

Teacher Handbook

SYLLABUS 2025-26 SAMPLE PAPER

IEO NSO IMO ICO

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SOF OLYMPIADS

Important: Applications must reach us by **August 30, 2025.**

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Contents

1.	About SOF Olympiads	4
2.	School Awards	5
3.	Scholarships	6
4.	Scholarships & Awards	7
5.	Guidelines	8
6.	IEO Syllabus and Sample Paper	9-10
7.	NSO Syllabus and Sample Paper	11-14
8.	IMO Syllabus and Sample Paper	15-18
9.	ICO Syllabus and Sample Paper	19-22

About SOF Olympiads*

Level 1

	IGKO	IEO	NSO	IMO	ICSO	ISSO	IHO	ICO
Duration	60 Minutes							
Test Center	Your School							
Eligibility	All students							
Classes	1-10	1-12	1-12	1-12	1-10	3-10	3-10	11 & 12
Type of Test	OBJECTIVE TYPE. MCQs - MULTIPLE CHOICE QUESTIONS (CLASSWISE NO. OF QUESTIONS ARE GIVEN BELOW)							
Classes 1-4	35	35	35	35	35	35	35	-
Classes 5-12	50	50	50	50	50	50	50	50
Sections	4	4	3	4	4	2/4/5	3	4
	• General Awareness • Current Affairs • Life Skills • Achievers Section	• Word and Structure Knowledge • Reading • Spoken and Written Expression • Achievers Section	For Classes 1-10 • Logical Reasoning • Science • Achievers Section For Classes 11 & 12 • Physics & Chemistry • Achievers Section • Mathematics or Biology	For Classes 1-10 • Logical Reasoning • Mathematical Reasoning • Everyday Mathematics • Achievers Section For Classes 11&12 • Logical Reasoning • Mathematical Reasoning or Applied Mathematics • Everyday Mathematics • Achievers Section	For Classes 1-5 • Logical Reasoning • Computer Science • Information Technology • Achievers Section For Classes 6-10 • Logical Reasoning • Computer Science • AI, Robotics and Information Technology • Achievers Section	For Classes 3 - 6 • Social Studies • Achievers Section For Classes 7 & 8 • History • Geography • Social and Political Life • Achievers Section For Classes 9 & 10 • History • Geography • Political Science • Economics • Achievers Section	• शब्द और व्याकरण बोध • रचनात्मक बोध • मेधावी खंड	• Economics • Business Studies • Accountancy • Achievers Section

Level 2

	IEO	NSO	IMO
Duration	60 Minutes		
Test Center	SOF Centers		
Eligibility	Class toppers, Level 1 rank holders, Zonal top 25		
Classes	3-12	3-12	3-12
Type of Test	OBJECTIVE TYPE. MCQs - MULTIPLE CHOICE QUESTIONS		
Classes 1-4	35	35	35
Classes 5-12	50	50	50
Sections	3	2/3	2/3
	• Word and Structure Knowledge • Reading • Achievers Section	For Classes 3 -10 • Science • Achievers Section For Classes 11 & 12 • Physics & Chemistry • Achievers Section • Mathematics or Biology	For Classes 3 -10 • Mathematics • Achievers Section For Classes 11 & 12 • Mathematics • Mathematical Reasoning or Applied Mathematics • Achievers Section

*For latest information, please visit www.sofworld.org

SOF OLYMPIADS

SCHOOL AWARDS

	Principal			Teacher and Olympiad Incharge		
	Cash Award	Trophy	Certificate	Cash Award	Trophy	Certificate
School	☑	☑	☑	☑	☑	☑
District	☑	☑	☑	☑	☑	☑
Zonal	☑	☑	☑	☑	☑	☑
International	☑	☑	☑	☑	☑	☑

SOF SCHOOL ACADEMIC PROGRESS REPORT FOR EVERY SCHOOL

☑ Annual SOF Gifts	☑ New Year SOF Gifts

Scholarships

SOF's dedicated scholarships, including the Girl Child Scholarship Scheme, Defence Services Academic excellence Scholarship and Academic Excellence Scholarship, demonstrate its commitment to fostering inclusivity and supporting education for all.

SOF
GCSS
Girl Child Scholarship Scheme 2025-26

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DSAS
Defence Services Academic excellence Scholarship 2025-26

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SOF
AES
Academic Excellence Scholarship 2025-26

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Scholarships & Awards*

The Science Olympiad Foundation (SOF) is committed to nurturing young talent and recognizing excellence in academics and beyond. Through its prestigious Olympiads, SOF not only challenges students to reach their highest potential but also acknowledges their achievements with an extensive range of awards, scholarships and recognitions.

Scan the QR code for more details

Level 1 - Scholarships and Awards

Level	Recognition
Level 1	• All participating students receive a **Certificate of Participation***. • All participating students receive a detailed **SPR - Student Progress Report**. • **Gold Medal of Distinction** and **Certificate of Distinction** for top 25 Zonal toppers per class per exam*. • **Gold Medal of Excellence** for top 10% students from each class. • **SAPR - School Academic Progress Report** for school management.

Final Level - Scholarships and Awards

Level	Category	Award	Additional Recognition	Numbers
Level 2 (IEO, NSO, IMO) **Level 1** (IGKO, ICSO, ISSO, IHO, ICO) **Level 1** (IEO, NSO, IMO) Class 1 & 2	Top 3 International Rankers	₹50,000, ₹25,000 and ₹10,000 for ranks 1, 2 and 3 respectively	International Medals: Gold, Silver and Bronze Certificate of Outstanding Performance	222 Winners
	Top 3 Zonal Rankers	₹5,000, ₹2,500 and ₹1,000 for ranks 1, 2 and 3 respectively	Zonal Medals: Gold, Silver and Bronze Certificate of Zonal Excellence	5,772 Winners
	Zonal Rankers 4 to 10	Gift worth ₹500 each	Certificate of Zonal Excellence	13,468 Winners
	Zonal Rankers 11 to 25	Certificate of Zonal Excellence		28,860 Winners
Level 2 (IEO, NSO, IMO)	Zonal Rankers 26 onwards	Merit Certificate		

Recognition for Visionary Leaders (School Principals) & Visionary Educators (Teachers)

Best Principal (International)	Citation + Trophy + ₹**25,000**
Best Principal (Zonal)	Citation + Trophy + ₹**10,000**
Best Principal (District)	Citation + Trophy + ₹**5,100**
Best Teacher (International)	Citation + Trophy + ₹**10,000**
Best Teacher (Zonal)	Citation + Trophy + ₹**5,000**
Best Teacher (District)	Citation + Trophy + ₹**1,000**

* For further details, please visit www.sofworld.org **Note:** TDS as applicable will be deducted.

Guidelines

Scan the QR code to get important updates

1. **Medium of the Olympiads**
   All SOF Olympiads will be conducted in English, except IHO, which will be conducted in Hindi.

2. **School Codes**
   Each school receives a unique 6-digit code from SOF when it registers for the Olympiads (different from CBSE or any other education board affiliation code). Schools should contact the SOF Head Office in Gurugram if they do not know their code.

3. **Registration Procedure**
   Schools must complete all columns of the SRF (School Registration Form) and SRS (Student Registration Sheet) accurately and legibly and submit them before the due date. Schools are requested to display the enclosed posters on noticeboards, classrooms, or other prominent places. Students must register through their schools only. Individual or direct registrations will not be accepted.
   Schools may register in one of the following ways:
   - Fill out and courier the registration forms.
   - Fill out, scan, and email the registration forms.
   - Register online at ors.sofworld.org.

4. **Sample Questions & Study Material**
   Sample questions and study material for each class are included with the prospectus. They can also be downloaded from the SOF website: www.sofworld.org.

5. **Exam Format**
   All questions are multiple-choice questions (MCQ). There is no negative marking. Schools must choose one available date to conduct the exam. They must conduct it strictly on that chosen date only. Different sets of question papers are provided for each date, and non-adherence to the chosen date may lead to cancellation of the exam.

6. **OMR Sheets**
   Students must fill in all columns of the OMR sheet correctly. Any incorrect or incomplete information may lead to disqualification from ranking. A sample OMR sheet is available on the SOF website and is also attached with the prospectus.

7. **After the Exam**
   Answer sheets should be returned to the SOF Head Office next day of the exam. Schools must ensure the answer sheets reach the SOF Head Office within 7 days of the exam date. SOF will not evaluate any answer sheets received beyond the stipulated date.

8. **Result**
   Results are typically declared about 8 weeks after the answer sheets are received. They will be sent to the respective schools and will also be uploaded on the SOF website.

LEVEL 1 SOF OLYMPIADS

1. **Examination Centre**
   All Level 1 Olympiads will be conducted in the students' own schools.

2. **Time of the Olympiads**
   The Level 1 Olympiads are held during school hours.

3. **Criteria for Level 1**
   All students (as per their school's registration) in the relevant classes for the respective Olympiads.

Note : *Some exams are single-level only: IGKO, ICSO, ISSO, IHO and ICO. Students appearing for these exams will not have a Level 2 exam.*

LEVEL 2 SOF OLYMPIADS

1. **Applicable Olympiads**
   Level 2 Olympiads are conducted for IEO, NSO, and IMO for classes 3 to 12. IGKO, ICSO, ISSO, IHO and ICO do not have a Level 2 (they are single-level exams).

2. **Date and Examination Centre**
   The Level 2 exam is scheduled for 8th February, 2026 tentatively. It will be conducted at centers finalized by SOF (not in the students' own schools).

3. **No Registration Fee**
   No separate registration fee is charged for the Level 2 exams.

4. **Qualification Criteria**
   - Top 5% of students (class-wise) who appear in the Level 1 exam, internationally.
   - Top 25 rank holders from each zone and each class.
   - Class topper (where at least 10 students from a class register for the exam and the topper scores at least 50% marks). In the case of multiple sections in a class, the topper with the highest marks across all sections qualifies.

5. **Admit Cards**
   Admit Cards for the Level 2 Olympiads will be dispatched to schools or uploaded on the SOF website (www.sofworld.org) before the Level 2 exam. The Roll Number slip from the Level 1 exam may also serve as the admit card for Level 2 for qualifying students.

SAMPLE PAPER
2025-26

SOF OLYMPIADS

IEQ
SOF INTERNATIONAL ENGLISH OLYMPIAD

Total Questions : 50 Time : 1 hr.

PATTERN & MARKING SCHEME				
Section	(1) Word and Structure Knowledge	(2) Reading	(3) Spoken and Written Expression	(4) Achievers Section
No. of Questions	30	10	5	5
Marks per Ques.	1	1	1	3

SYLLABUS

As Per Your Prescribed Syllabus.

WORD AND STRUCTURE KNOWLEDGE

1. Choose the correct option to fill in the blank.
The phrase "rolling in dough" means _____.
(A) to prepare a delicious cake
(B) to be addicted to drugs
(C) to have large amounts of money to spend
(D) to be extremely fair in complexion

2. Choose the option with correct spelling.
How do you spell the word that means "relating to or dependent on charity"?
(A) Elimusmary (B) Eleemosynary
(C) Eleimosinery (D) Eliemosynery

READING

Directions (For Q. No. 3 to 6) : Choose the correct option to fill in the blanks.
When her friends arrived, Suman ___3___ chips and other snacks and her sister ___4___ drinks. She went round the room ___5___ glasses whenever she noticed that anyone needed a ___6___.
(A) top-up (B) handed round
(C) poured out (D) topping up

SPOKEN AND WRITTEN EXPRESSION

Directions (For Q. No. 7 and 8) : Choose the correct option to complete each conversation.

7. Daniel : Sam is the new operations manager. I heard it _____.
(A) by the cat's call
(B) from the horse's mouth
(C) from the tiger's roar
(D) by the bird's beak

8. Janet : My friend was _____ after receiving the good news about getting accepted into her dream university.
(A) stodgy (B) ebullient
(C) squalid (D) vapid

ACHIEVERS SECTION

9. Choose the correct option to fill in the blank.
In the dense forest, the rustling leaves and the soft _____ of the wind created an enchanting _____ of nature's whispers.
(A) sonorous, coherence (B) blaring, harmony
(C) susurrus, symphony (D) thrum, strife

10. Choose the correct antonym of the given word.
Sacrilegious
(A) Pious (B) Profane
(C) Pernicious (D) Preserve

ANSWER KEY

1. (C) 2. (B) 3. (B) 4. (C) 5. (D) 6. (A) 7. (B) 8. (B) 9. (C) 10. (A)

SAMPLE PAPER
2025-26

SOF OLYMPIADS

NSO
SOF NATIONAL SCIENCE OLYMPIAD

Total Questions : 50 Time : 1 hr.

PATTERN & MARKING SCHEME			
Section	**(1) Physics & Chemistry**	**(2) Achievers Section**	**(3) Mathematics or Biology**
No. of Questions	**25**	**5**	**20**
Marks per Ques.	**1**	**3**	**1**

SYLLABUS

Section – 1 : Physics : Electricity and Magnetism, Electromagnetic Induction, Alternating current, Electromagnetic waves, Optics, Modern Physics, Semiconductor Electronics.

Chemistry : Solutions, Electrochemistry, Chemical Kinetics, The *d*-and *f*-Block Elements, Coordination Compounds, Haloalkanes and Haloarenes, Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic Acids, Amines, Biomolecules.

Section – 2 : Higher Order Thinking Questions - Syllabus as per Section – 1.

Section – 3 : Relations and Functions, Inverse Trigonometric Functions, Matrices and Determinants, Continuity and Differentiability, Application of Derivatives, Integrals, Application of Integrals, Differential Equations, Vector Algebra, Three Dimensional Geometry, Probability, Linear Programming.

OR

Section – 3 : Reproduction, Genetics and Evolution, Biology in Human Welfare, Biotechnology, Ecology.

PHYSICS AND CHEMISTRY

1. Match column I with column II and select the correct option.

	Column I (Complex)		**Column II (Hybridisation and magnetic moment)**
(P)	$[Ni(CN)_4]^{2-}$	(I)	sp^3d^2 and 4.89 B.M.
(Q)	$[CoF_6]^{3-}$	(II)	d^2sp^3 and 0 B.M.
(R)	$[NiCl_4]^{2-}$	(III)	dsp^2 and 0 B.M.
(S)	$[Co(NH_3)_6]^{3+}$	(IV)	sp^3 and 2.83 B.M.

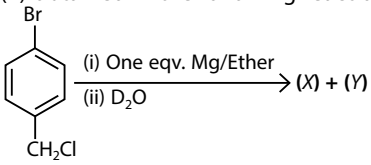
(A) (P) - (III), (Q) - (I), (R) - (II), (S) - (IV) (B) (P) - (III), (Q) - (I), (R) - (IV), (S) - (II)
(C) (P) - (IV), (Q) - (I), (R) - (III), (S) - (II) (D) (P) - (IV), (Q) - (II), (R) - (III), (S) - (I)

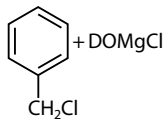
2. At 298 K, the values of Henry's law constant K_H for the gases (*P*), (*Q*) and (*R*) in water are given as 71.18, 1.67 and 41.85 kbar respectively.
Which of the given statements is/are not correct?
I. (*P*) has the highest solubility in water at a given pressure.
II. The pressure of a 55.5 molal solution of (*Q*) is 1.5×10^{-3} bar.

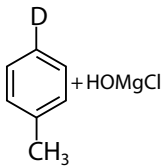
III. The solubility of (*R*) at 293 K is higher than that at 273 K.

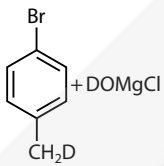
(A) III only (B) II and III only (C) I and II only (D) I, II and III

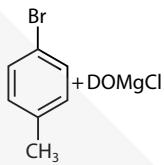
3. The products (*X*) and (*Y*) obtained in the following reaction are



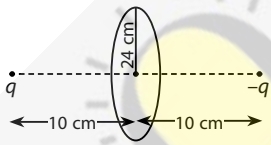
(A) 

(B) 

(C) 

(D) 

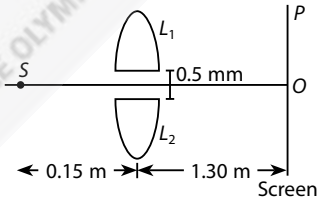
4. The given figure shows two point charges q and $-q$ separated by a distance of 20 cm.



What is the total electric flux passing through the circle?

(A) $\frac{8q}{13\varepsilon_0}$ (B) $\frac{15q}{38\varepsilon_0}$ (C) $\frac{16q}{31\varepsilon_0}$ (D) Zero

5. The given figure shows a monochromatic point source *S* emitting light of wavelength $\lambda = 500$ nm. A thin lens of circular shape and focal length 0.10 m is cut into two identical halves L_1 and L_2 which are placed symmetrically about axis *SO*. Here *P* is the point of third intensity maxima.



Which one of the following statements is incorrect?

(A) If the gap between L_1 and L_2 is reduced from its original value of 0.5 mm, the distance *OP* will increase.

(B) The distance of first maximum from the centre is 1.3 mm.

(C) The distance of fifth minimum from the centre is 1.5 mm.

(D) The distance of sixth maximum from the centre is 2 mm.

6. The peak emission from a black body at a certain temperature occurs at a wavelength of 9000 Å. On increasing its temperature, the total radiation emitted is increased 81 times. At the initial temperature, when the peak radiation from the black body is incident on a metal surface, it does not cause any photo emission. After the increase of temperature, the peak radiation from the black body caused photo emission. To bring these photoelectrons to rest, a potential equivalent to the excitation energy between $n = 3$ to $n = 4$, Bohr levels of hydrogen atom is required. What is the work function of the metal?

(A) 3.48 eV (B) 2.25 eV (C) 6.92 eV (D) 5 eV

ACHIEVERS SECTION

7. Study the following paragraph and fill in the blanks by selecting the correct option.

Compound _(P)_ has general formula $C_4H_{10}O$ and gives immediate turbidity with $ZnCl_2$ and conc. HCl. When _(P)_ is treated with 20% H_3PO_4 at 358 K, it produces _(Q)_ which on further reaction with acidic $KMnO_4$ produces _(R)_. Ozonolysis of _(Q)_ produces (*R*) along with formaldehyde. _(S)_ is a functional isomer of _(R)_.

	(P)	*(Q)*	*(R)*	*(S)*
(A)	2-methyl-propan-2-ol	2-methyl-prop-1-ene	Butanal	Butanone
(B)	2-methyl-propan-1-ol	2-Butene	Butanone	Butanal
(C)	2-methyl-propan-1-ol	1-Butene	Propanal	Propanone
(D)	2-methyl-propan-2-ol	2-methyl-prop-1-ene	Propanone	Propanal

8. A heavy nucleus *P*, at rest, undergoes fission in two lighter nuclei *Q* and *R*. Let $\alpha = M_P - M_Q - M_R$, where M_P, M_Q and M_R are the masses of *P*, *Q* and *R* respectively and E_Q and E_R are the kinetic energies of *Q* and *R* respectively. The speeds of *Q* and *R* are v_Q and v_R respectively. If *c* is the speed of light, which of the following statements are correct?

(i) $E_Q + E_R = c^2\alpha$ (ii) $E_Q = \left(\frac{M_Q}{M_Q + M_R}\right)c^2\alpha$ (iii) $\frac{v_Q}{v_R} = \frac{M_R}{M_Q}$

(iv) The magnitude of momentum for *Q* as well as *R* is $c\sqrt{2\mu\alpha}$, where $\mu = \frac{M_Q M_R}{M_Q + M_R}$

(A) (i) and (ii) only
(B) (i), (iii) and (iv) only
(C) (iii) and (iv) only
(D) (i), (ii), (iii) and (iv)

MATHEMATICS

9. If $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & a & 1 \end{bmatrix}$ and $A^{-1} = \begin{bmatrix} 1/2 & -1/2 & 1/2 \\ -4 & 3 & c \\ 5/2 & -3/2 & 1/2 \end{bmatrix}$, then

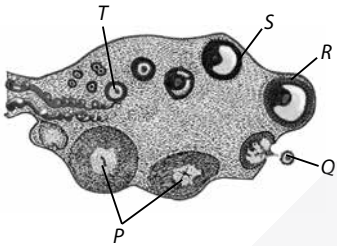
(A) $a = 2, c = 1/2$
(B) $a = 1, c = -1$
(C) $a = -1, c = 1$
(D) $a = 1/2, c = 1/2$

10. If the vectors $\vec{a}, \vec{b}, \vec{c}$ are such that each is inclined at an angle $\frac{\pi}{3}$ with the other and $|\vec{a}|=1, |\vec{b}|=2, |\vec{c}|=3$, then $|\vec{a} + \vec{b} + \vec{c}| =$

(A) $3\sqrt{2}$ (B) 4
(C) 5 (D) 6

BIOLOGY

9. Refer to the given figure and select the incorrect statement regarding its parts labelled as *P*-*T*.



(A) *P* consists of lutein cells, fibrin and blood clot.
(B) A large number of *T* degenerate during the phase from birth to puberty.
(C) *R* gets transformed into *S* which is characterised by a fluid filled cavity called antrum.
(D) The primary oocyte completes its first meiotic division and is released as haploid *Q*.

10. Given in the box are names of few species.

Lates niloticus, Eichhornia crassipes, Clarias gariepinus, Ectopistes migratorius, Lantana camara, Blatta orientalis, Hydrodamalis gigas, Parthenium hysterophous, Raphrus cucullatus

How many among them are extinct?
(A) 2 (B) 3 (C) 4 (D) 1

ANSWER KEY

Physics and Chemistry	1. (B)	2. (D)	3. (C)	4. (A)	5. (B)	6. (A)	7. (D)	8. (B)
Mathematics	9. (B)	10.(C)						
Biology	9. (C)	10.(B)						

SAMPLE PAPER
2025-26

SOF OLYMPIADS

IMO
SOF INTERNATIONAL MATHEMATICS OLYMPIAD

Total Questions : 50 Time : 1 hr.

PATTERN & MARKING SCHEME

Section	(1) Logical Reasoning	(2) Mathematical Reasoning or Applied Mathematics	(3) Everyday Mathematics	(4) Achievers Section
No. of Questions	15	20	10	5
Marks per Ques.	1	1	1	3

SYLLABUS

Section – 1 : Verbal and Non-Verbal Reasoning.

Section – 2 : Relations and Functions, Inverse Trigonometric Functions, Matrices and Determinants, Continuity and Differentiability, Application of Derivatives, Integrals, Application of Integrals, Differential Equations, Vector Algebra, Three Dimensional Geometry, Probability, Linear Programming.

OR

Section – 2 : Numbers, Quantification, Numerical Applications, Solutions of Simultaneous Linear Equations, Matrices, Determinants, Application of Derivatives, Integration, Application of Integrations, Differential Equations, Probability, Inferential Statistics, Index numbers, Time-based data, Financial Mathematics, Linear Programming.

Section – 3 : The syllabus of this section will be based on the syllabus of Quantitative Aptitude.

Section – 4 : Matrices, Determinants, Application of Derivatives, Integration, Application of Integrations, Differential Equations, Linear Programming, Probability.

LOGICAL REASONING

1. In the following equation, two signs and two numbers need to be interchanged to make it correct. Select the correct interchange of signs and numbers from the given options.

$$1050 \times 60 \div 7 + 13 - 50 = 100$$

(A) ÷, × and 7, 50
(B) ×, – and 60, 7
(C) ×, ÷ and 60, 50
(D) +, ÷ and 50, 13

2. Select the odd one out.

(A) 
(B) 
(C) 
(D) 

3. A number arrangement machine when given an input of numbers, rearranges them following a particular rule in each step. The following is an illustration of input and steps of rearrangement.

Input :	25	280	345	36	93	147	550
Step-I :	550	280	345	36	93	147	25
Step-II :	550	345	280	93	147	36	25
Step-III :	550	345	280	147	93	36	25

What will be the third step for the following input?

Input :	113	18	48	225	462	175	288
(A)	462	288	48	225	113	175	18
(B)	462	288	225	175	113	48	18
(C)	462	225	288	48	113	175	18
(D)	462	288	225	48	113	175	18

MATHEMATICAL REASONING

4. If A is skew-symmetric matrix of order 2 and B, C are matrices $\begin{bmatrix} 1 & 4 \\ 2 & 9 \end{bmatrix}$ and $\begin{bmatrix} 9 & -4 \\ -2 & 1 \end{bmatrix}$ respectively, then $A^3BC + A^5(B^2C^2) + A^7(B^3C^3) + \ldots\ldots + A^{2^n+1}B^nC^n$ is

(A) A skew-symmetric matrix
(B) A symmetric matrix
(C) An identity matrix
(D) None of these

5. Solve the differential equation $(x + y)dy + (x - y)dx = 0$, given that $y = 1$ when $x = 1$.

(A) $\log(x+y) + \frac{\pi}{2} = \log 2$

(B) $\log y^2 + \tan^{-1}\left(\frac{y}{x}\right) = \log 2$

(C) $\log(x^2+y^2) + 2\tan^{-1}\left(\frac{y}{x}\right) = \frac{\pi}{2} + \log 2$

(D) $\log x^2 + 2\tan^{-1}\left(\frac{y}{x}\right) = \frac{\pi}{2}$

6. It has been found that if A and B play a game 12 times, A wins 6 times, B wins 4 times and they draw twice. A and B take part in a series of 3 games. The probability that they will win alternately is

(A) $\frac{5}{72}$ (B) $\frac{5}{36}$

(C) $\frac{19}{27}$ (D) None of these

APPLIED MATHEMATICS

4. The following table gives information regarding weekly income of labourers working at a dam site:

Income (in ₹)	600-700	700-800	800-900	900-1000	1000-1100	1100-1200	1200-1300
Number of labourers	40	68	86	120	90	40	26

Estimate the quartile deviation.

(A) 115.87 (B) 231.77

(C) 7.99 (D) 8.88

5. For a Poisson's distribution, $3P(X = 2) = P(X = 4)$. Find $P(X = 3)$. (Use : $e^{-6} = 0.00248$)

(A) 0.07297 (B) 0.08928

(C) 0.06261 (D) 0.0216

6. The amount of money today which is equal to series of payments in future is

(A) Nominal value of annuity (B) Present value of annuity

(C) Future value of annuity (D) None of these

EVERYDAY MATHEMATICS

7. In a class, 25% of the students get a scholarship. There are 40 girls and 50% of them get a scholarship. If the girls constitute 25% of the strength of the class, then find the percentage of boys who get a scholarship.

(A) 15% (B) 25%

(C) 20% (D) None of these

8. A man 2 metres tall walks away from a lamp post 5 metres height at the rate of 4.8 km/hr. The rate of increase of the length of his shadow, is

(A) 1.6 km/hr (B) 6.3 km/hr

(C) 5 km/hr (D) 3.2 km/hr

ACHIEVERS SECTION

9. Read the given statements carefully and select the correct option.

Statement-I : The degree and order of the differential equation $\left(1+\left(\frac{dy}{dx}\right)^3\right)^{\frac{7}{3}} = 7\frac{d^2y}{dx^2}$ respectively are 3 and 2.

Statement-II : If $x^3dy + xydx = x^2dy + 2ydx$, $y(2) = e$, then $y(-1) = \frac{4}{e}$.

(A) Both Statement-I and Statement-II are true.

(B) Both Statement-I and Statement-II are false.

(C) Statement-I is true but Statement-II is false.

(D) Statement-I is false but Statement-II is true.

10. Solve the following and select the correct option.

(i) If the function $f(x) = 2x^2 - kx + 5$ is increasing on [1, 2], then k lies in the interval

(ii) The interval in which the function $y = x^3 + 5x^2 - 1$ is decreasing, is

	(i)	**(ii)**
(A)	$(-\infty, 4)$	$(0, 10)$
(B)	$(4, \infty)$	$\left(\frac{-10}{3}, 0\right)$
(C)	$(-\infty, 4)$	$\left(\frac{-10}{3}, 0\right)$

(D) None of these

ANSWER KEY

1. (C) 2. (C) 3. (B)

MATHEMATICAL REASONING 4. (A) 5. (C) 6. (B)

APPLIED MATHEMATICS 4. (A) 5. (B) 6. (B)

7. (D) 8. (D) 9. (C) 10. (C)

SAMPLE PAPER
2025-26

SOF OLYMPIADS

ICO
SOF INTERNATIONAL COMMERCE OLYMPIAD

Total Questions : 50 Time : 1 hr.

PATTERN & MARKING SCHEME				
Section	(1) Economics	(2) Business Studies	(3) Accountancy	(4) Achievers Section
No. of Questions	15	15	15	5
Marks per Ques.	1	1	1	3

SYLLABUS

Section – 1 : Introductory Macroeconomics, Indian Economic Development.

Section – 2 : Nature and Significance of Management, Principles of Management, Business Environment, Planning, Organising, Staffing, Directing, Controlling, Financial Management, Financial Markets, Marketing Management, Consumer Protection.

Section – 3 : Accounting for Partnership Firms, Accounting for Companies, Analysis of Financial Statements, Cash Flow Statement.

Section – 4 : Higher Order Thinking Questions - Syllabus as per Section-1, Section-2 and Section-3.

ECONOMICS

1. Which of the following is not the institutional problem of Indian agriculture?
(A) Defective tendency of land reforms
(B) Lack of credit availability
(C) Lack of irrigation facilities
(D) Poor marketing facilities

2. Select the incorrect match.
(A) $GDP_{FC} = GDP_{MP}$ – Indirect taxes + Subsidies
(B) $NNP_{FC} = GNP_{FC}$ – Depreciation
(C) $GNP_{MP} = GDP_{MP}$ + NFIA
(D) $GDP_{MP} = GNP_{FC}$ + Depreciation

3. Which of the following is an example of expenditure on social medicine?
(A) Cost incurred on curative medicine
(B) Spread of health literacy
(C) Firms spend on the supply of healthy labour force
(D) Medical intervention during illness

4. What is/are the way(s) through which the linkages are established among the economies?
(A) Labour market (B) Financial market
(C) Output market (D) All of these

BUSINESS STUDIES

5. X is the allotment of securities by a company to institutional investors and some selected individuals. It helps to raise capital more quickly than a public issue. Identify X.

(A) e-IPOs
(B) Right issue
(C) Offer for sale
(D) Private placement

6. Which principle of 'directing' emphasises that the directing techniques must help every individual in the organisation to contribute to his maximum potential for achievement of organisational objectives?

(A) Follow through
(B) Appropriateness of direction technique
(C) Harmony of objectives
(D) Maximum individual contribution

7. Select the incorrect match.

(A)	Method study	–	To find out the one best way of doing the job
(B)	Division of work	–	Leads to specialisation
(C)	Unity of command	–	Everyone should move towards the same objectives through coordination and focussed efforts
(D)	Unity of direction	–	Prevents overlapping of activities

8. Read the given statement and select the option that correctly fills the blanks (i) and (ii).

A/An __(i)__ leader gives orders and expects his subordinates to obey the orders, while a/an __(ii)__ leader develops action plans and makes decisions in consultation with his subordinates.

	(i)	(ii)
(A)	Authoritarian	Participative
(B)	Free-rein	Autocratic
(C)	Democratic	Free-rein
(D)	Participative	Authoritarian

ACCOUNTANCY

9. Verma and Chaudhary are partners in a firm, sharing profits and losses in the ratio of 5 : 2. Chaudhary withdrew ₹ 3,600 at the beginning of each quarter. Verma withdrew ₹ 2,400 in the middle of each month.

What is the total amount of interest on drawings, if interest on drawings is 8% p.a.?

(A) ₹ 1,872 (B) ₹ 276 (C) ₹ 1,332 (D) ₹ 816

10. X Ltd. forfeited 4,000 shares of ₹ 10 each, which were issued by a shareholder, for non-payment of call money of ₹ 4 per share. The called-up value per share was ₹ 7. On forfeiture, the amount credited to share forfeiture account is

(A) ₹ 16,000 (B) ₹ 28,000 (C) ₹ 12,000 (D) ₹ 8,000

11. If closing inventory of a firm is ₹ 1,40,000; Inventory Turnover Ratio is 6 and Cost of Revenue from Operations is ₹ 7,20,000, then what will be the opening inventory of firm?

(A) ₹ 1,00,000 (B) ₹ 1,20,000
(C) ₹ 80,000 (D) ₹ 1,40,000

12. Read the given statement and select the correct option to fill in the blanks.
Under fixed capital method, items related to deed are posted in the __(i)__ account and capital accounts always show a __(ii)__ balance.

	(i)	(ii)
(A)	Current	Credit
(B)	Capital	Debit
(C)	Current	Debit
(D)	Capital	Credit

ACHIEVERS SECTION

13. How many of the given statements regarding the occupational structure during the colonial period is/are incorrect?

(i) The manufacturing and services sectors accounted for 10 per cent and 15-20 per cent respectively.
(ii) Parts of the then Madras Presidency, Bombay and Bengal witnessed a high dependency of the workforce on the agricultural sector.
(iii) There had been an increase in the share of employment in agricultural sector in Orissa, Rajasthan and Punjab.
(iv) The agricultural sector accounted for the largest share of workforce which is 50-55 per cent.

(A) 1 (B) 2 (C) 3 (D) 4

14. Refer to the given table showing differences between Fayol's principles and Taylor's principles.

	Basis of difference	Fayol	Taylor
(i)	Applicability	Applicable to specialised situations	Applicable universally
(ii)	Personality	Practitioner	Scientist
(iii)	Basis of formation	Observations and experimentations	Personal experience
(iv)	Focus	Improving overall administration	Increasing productivity
(v)	Perspective	Top level management	Lower level management
(vi)	Unity of Command	Not followed	Strictly followed

Which of the above differences are incorrect?

(A) (i), (iii) and (vi) only (B) (ii), (iv) and (v) only
(C) (i), (v) and (vi) only (D) (i), (iii), (iv) and (vi) only

15. From the following information, calculate (approx.)

(i) Gross profit ratio (ii) Operating ratio.

Given,

Revenue from operations	=	₹ 1,50,000
Purchases : Cash	=	₹ 25,000
: Credit	=	₹ 65,000
Decrease in inventory	=	₹ 2,000
Wages	=	₹ 4,500
Selling expenses	=	₹ 75,000
Administrative expenses	=	₹ 40,500

	(i)	(ii)
(A)	35.66%	141.33%
(B)	38.73%	143.33%
(C)	36.82%	145.33%
(D)	34.66%	146.33%

ANSWER KEY

1. (C)	2. (D)	3. (B)	4. (D)	5. (D)	6. (D)	7. (C)	8. (A)	9. (A)	10. (C)
11. (A)	12. (A)	13. (B)	14. (A)	15. (A)					

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