

**INFORMATION REGARDING
ADMISSION INTO CLASS XI SCIENCE, IGNITE-19 (Engineering/Medical),
COMMERCE & HUMANITIES 2019-20**

1. SCHEDULE:

Commencement of Online Registration	22 February 2019
Last date for Online Registration	21 March 2019
Date of Aptitude Test	01 April 2019 Science, IGNITE-19 (Engineering/Medical), Commerce & Humanities
Venue	DAV Public School, Unit-VIII, Bhubaneswar (Entry – Gate No. 2)
Time of Entry to Exam Hall	10:00 am for Science & IGNITE-19 02.30 pm for Commerce & Humanities
Date of Publication of Result	2 April 2019 at 5.00 pm (Please check school website (www.davunit8.org) / school notice board for the merit list)
Date of Counselling/ Provisional Admission	4 April 2019 (Science & IGNITE-19) 5 April 2019 (Commerce & Humanities) (Exact time will be mentioned in the merit list)
Commencement of classes	15 April 2019
Date of Final Admission	01 July 2019

2. Candidates seeking admission into Class XI have to register by paying ₹1000/-. Candidates seeking admission into Science & Commerce/Humanities will apply separately. Candidates qualified for Commerce can take (if interested) admission into Humanities directly.
3. Under no circumstances the date and time of Aptitude Test and provisional admission can be extended.
4. Mere registration doesn't confer right on anyone to claim admission.
5. Please refer the auto-generated Admit Card Id number for all correspondence till admission.

FOR QUERIES, CONTACT :

- IGNITE-19 In-Charge : 9338439278
- Hostel in-charge – Boys : 9437412140, Girls : 9437952913
- Admin Contact No. : 9861603247
- Examination in-charge. : 9861360561
- E-mail : unit8dav@gmail.com
- School Phone No. : 0674-2391328
- Website : www.davunit8.org

APTITUDE TEST – SCIENCE & IGNITE-19 (Engineering/Medical) [Date 01.04.19]

PART-A (MCQ)

Subject	No. of questions	Total Marks	Timing	Students Entry to School Premises	Students Entry to Exam Hall
1. Mathematics	30	30 x 3	10:30 a.m to 1:00 p.m (2½ hrs.)	09:30 a.m	10:00 a.m
2. Physics	25	25 x 3			
3. Chemistry	25	25 x 3			
4. Biology	20	20 x 3			
Total	100	300			

PART-B (MCQ)

**Only for IGNITE-19 (Engineering / Medical Batch)
(15 minutes gap is there between PART-A & PART-B Exam)**

Subject	No. of questions	Total Marks	Timing
1. Mathematics/Biology	10	10 x 3	1:15 p.m to 2:15 p.m (1 hr.)
2. Physics	10	10 x 3	
3. Chemistry	10	10 x 3	
Total	30	90	

APTITUDE TEST – COMMERCE [Date : 01.04.19]

Subject	No. of questions	Total Marks	Timing	Students Entry to School Premises	Students Entry to Exam Hall
1. Economics & Current Affairs	35	35 x 3	3:00 p.m to 5:00 p.m (2 hrs.)	2:00 p.m	2:30 p.m
2. Mathematics	20	20 x 3			
3. English	25	25 x 3			
Total	80	240			

APTITUDE TEST – HUMANITIES [Date : 01.04.19]

Subject	No. of questions	Total Marks	Timing	Students Entry to School Premises	Students Entry to Exam Hall
1. English	25	25 x 3	3:00 p.m to 5:00 p.m (2 hrs.)	2:00 p.m	2:30 p.m
2. Social Science (Hist-15, Geo-15, Eco-10)	40	40 x 3			
3. Current Affairs	15	15 x 3			
Total	80	240			

IMPORTANT INFORMATION for IGNITE-19 (Engineering/Medical)

1. OBJECTIVE -

- To prepare meritorious few for the professional examination after Class-XII viz, IIT, NIT, AIIMS, NEET, AIPMT, KVPY & other Medical/Engineering Entrances
- To instill in them an attitude to think out of the box
- To equip them and give an opportunity to prepare for various entrance examinations along with CBSE
- To provide them a complete 4 hours after school for self study at home

2. ELIGIBILITY CRITERIA -

- A minimum of 85% in Pre-Board / Half-Yearly Exam of Class-X. Applications will be accepted only after verification of the documents.

3. SELECTION PROCEDURE -

- For IGNITE-19 (Medical/Engineering) merit list will be on the basis of the sum of Part-A by converting its total mark to 100 & Part-B marks.

4. PLAN -

- Classes will be taken by faculties having expertise in CBSE as well as professional course curriculum.
- School will take entire responsibility of the study materials (unit-wise) consisting of CBSE as well as entrance level.
- Fooding facility to the students during stay hours.
- To conduct online test alongwith weekly objective as well as subjective test to acquaint student with different types of examinations.

INSTRUCTIONS :

1. On the day of Aptitude Test, students must carry Admit Card for the purpose which will be generated after successful registration of online application form and photocopy of Class-X Board Exam Admit Card.
2. There shall be 4 series of questions viz: (A, B, C, D) and each question of every series has exactly one correct answer which carries 3 marks.
3. 1 mark will be deducted for every wrong answer/overwriting/scratching/multiple answers.
4. For class-XI (General) merit list will be on the basis of Part-A marks.

FEE STRUCTURE FOR 2019-20 :

It will be notified in the third week of March 2019 in the school website.

However, for an idea, fee structure for 2018-19 as given below can be referred to:

- **For Science, Commerce & Humanities (2018-19)**

Day scholars	Admission fee of ₹ 65,720/- (approx.) inclusive of all fee (first quarter tuition fee ₹ 12,220/-, refundable security money of ₹ 15,000/-, Blazer, Compulsory set of books, Activities, Seminars, Workshops etc.)
Hostelites	(i) Admission fee of ₹ 65,720/- (approx.) inclusive of all fee (first quarter tuition fee ₹ 12,220/-, refundable security money of ₹ 15,000/-, Blazer, Compulsory set of books, Activities, Seminars, Workshops, etc.) (ii) Hostel Charges ₹ 71,000/- (approx.) (including refundable security money of ₹ 2,000/-)

▪ **For IGNITE-18 (Engineering/Medical for the session 2018-19)**

Course Fee	(i) Day scholars ₹ 1,69,000/- (includes fee for Blazer, Compulsory set of books, Activities, Seminars, etc.) (ii) Hostelites will pay ₹ 52,000/- in addition to the aforesaid amount.
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REQUIRED DOCUMENTS FOR PROVISIONAL ADMISSION:

1. Photo copy of the Class-X admit card of CBSE/ICSE/BSE/other equivalent Board.
2. Bottom portion of the DAV Aptitude Test Admit Card
3. Attested photocopy of marksheet of Std. X Pre-Board Exam / Half-yearly Exam

NB :

- Exact admission fee will be notified on the day of the publication of result.
- During counselling, presence of parents (only) is mandatory.
- Absence in counselling will lead to forfeiture of claim for admission.

REQUIRED DOCUMENTS FOR FINAL ADMISSION:

1. Original and Attested Photocopy of mark sheet of the Board Examination/ Qualifying Examination.
2. Original Transfer Certificate / School Leaving Certificate of the previous school.
3. Original Conduct Certificate from the concerned school last attended.
4. Original Migration Certificate from the concerned Board.

NB : In case of failure to take final admission or withdrawal of candidate after provisional admission, no fee will be refunded.

HOSTEL FACILITY:

The school provides hostel facility for girls and boys. Details for the same may be sought during the time of admission.

Sd/-
CHAIRMAN
ADMISSION COMMITTEE

SYLLABI FOR THE APTITUDE TEST

1. MATHEMATICS:

a. Quadratic Equation (Science/IGNITE-19, Commerce & Humanities):

Standard form of a quadratic equation $ax^2 + bx + c = 0$ ($a \neq 0$), solution of quadratic equations (only real roots) by factorisation and by completing square method, relationship between discriminant and nature of roots, problems related to day to day activities.

b. Trigonometry (Science/IGNITE-19, Commerce & Humanities):

Trigonometric ratios and identities, trigonometric ratios of complementary angles, height and distances.

c. Probability (Science/IGNITE-19, Commerce & Humanities):

Elementary ideas of probabilities as measure of uncertainty (for single event only)

d. Co-ordinate geometry (Science/IGNITE-19 only):

Distance between two points, section formula (internal division) only, area of a triangle.

e. Mensuration (Science/IGNITE-19 only):

Problems on finding volumes and surface areas of combinations of right circular cone, right circular cylinder, hemisphere and sphere, frustum of a cone, perimeter, area of a circle, area of a sector, segment of the circles, area of combined figures.

f. ALGEBRA

Polynomial (Science/IGNITE-19, Commerce & Humanities):

Zeros of a polynomial, relationship between zeros and coefficients of a quadratic polynomial, division algorithm for polynomials with real co-efficients.

Real number (Science/IGNITE-19 only):

Euclid Lemma, Fundamental theorem of arithmetic, irrational number and their decimal expansion.

g. Geometry (Science/IGNITE-19 only):

Similar triangles and its properties, Pythagoras theorem. Arc and chord of a circle, congruence, cyclic quadrilaterals, tangents to circles.

2. PHYSICS: (Science/IGNITE-19)

a. Motion & Force:

Distance and displacement, Velocity (uniform and non uniform), Distance – time and velocity – time graph, Newton's Laws of motion, Action & reaction force, Inertia of a body, Momentum.

b. Effects of current:

Electric current, potential difference and electric current, Ohm's law, Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, interrelation between P, V, I and R, chemical effect of current.

c. Magnetic effects of current:

Magnetic field, Field lines, field due to current carrying conductor, field due to current carrying coils or solenoid: Force on current carrying conductor. Fleming's left hand rule, Electromagnetic induction, induced potential difference, induced current, Fleming's right hand rule, direct current, alternating current, Frequency of A.C. advantage of A.C. over D.C., Domestic electric circuits.

d. Light & Optical Phenomenon:

Reflection of light at plane and curved surfaces. Images formed by spherical images, centre of curvature, principal axis, principal focus, focal length, mirror formula, magnification. Refraction, Laws of Refraction, Refractive index, Refraction of light by slab and spherical lens, image formed by spherical lens, Lens formula, Magnification, Power of a lens. Functioning of a lens in human eye, Defects of vision and their corrections. Application of spherical mirrors and lenses, Refraction of light through a prism, Dispersion of light, scattering of light, application in daily life.

3. CHEMISTRY: (Science/IGNITE-19)

a. Atoms and Molecules:

Laws of chemical combination, Atoms and atomic theory of matter, Dalton's Atomic theory, Atoms, Molecules, ions, Rules of writing the chemical formulae, Mole concept

- b. **Structure of Atom:**
Discovery of electron, Discovery of proton, Discovery of neutron, Thomson's model of the atom, Rutherford model of atom, Bohr's model of atom, Atomic number, Mass number, Electronic configuration, Valence electrons, Valency of elements, Isotopes, Isobars.
 - c. **Chemical Reactions and Equations:**
Chemical equations, Balanced chemical equations, Types of chemical reactions.
 - d. **Acids, Bases and Salts:**
Definitions (all modern concepts), Neutralization reactions, pH scale, Acidic salt, basic salt, Properties of acids and bases.
 - e. **Periodic Classification of Elements:**
History of classification, Periodic law, Mendeleev's Periodic table, Modern periodic table. Periodic properties (atomic size, metallic and non-metallic nature, valence, electronegativity) and their variation across a period & along a group.
 - f. **Metals and Non Metals:**
Physical and Chemical properties of metals and non metals, Reactivity series, Basic metallurgical processes. Corrosion.
 - g. **Carbon Compounds:**
Catenation, Functional group, IUPAC name (hydrocarbon, halides, alcohols aldehydes ketones, carboxylic acid), Structural isomerism (chain and position), Types of organic reactions (substitution, addition, elimination, oxidation, reduction). Preparation and properties and uses of ethanol and ethanoic acid, Fermentation and its importance.
4. **BIOLOGY: (Science/IGNITE-19)**
- a. **Fundamental unit of life, Diversity in plant & Animal kingdom:**
Cell - structure, function, cell membrane, cell components, cell wall, mitochondria, chloroplast etc. Difference between Prokaryotes & Eukaryotes, Classification of plants & animals with characteristics and examples.
 - b. **Life Process:**
Nutrition-autotrophic and heterotrophic nutrition, Human digestive system, Respiration-respiration in plants and animals, human respiratory system, Transportation-transportation in plants, transpiration, opening and closing of stomata, human circulatory system, Excretion-excretion in plants and animal, human excretory system.
 - c. **Control and Coordination:**
Plant growth and movement and plant growth regulators, Nervous control and coordination, reflex action, Chemical control and coordination, animal hormones.
 - d. **Reproduction:**
Types of reproduction, Types of asexual mode of reproduction, Sexual reproduction in plants and animals, Human reproductive systems and birth control measures.
 - e. **Heredity and evolution:**
Monohybrid and dihybrid cross, Sex determination. Theories of evolution and evidences of evolution.
 - f. **Our environment:**
Structure of ecosystem - abiotic and biotic components, Function of ecosystem - food chain, food web. energy flow and ecological pyramid. Environmental pollution.
5. **ECONOMICS & CURRENT AFFAIRS (Commerce only):**
Banking Services in India, Consumers Awareness, Economic Reforms in India, Statistics (Mean & Median), Poverty in India and **Current Affairs**.
6. **ENGLISH (Commerce & Humanities):**
Grammar, Synonyms & Antonyms, One-word substitution, Reading Comprehension
7. **SOCIAL SCIENCE & CURRENT AFFAIRS (Humanities only):**
- a. **HISTORY:** The rise of Nationalism in Europe, Nationalism in India, The Print Culture & the Modern World, Age of Industrialisation
 - b. **GEOGRAPHY:** Resources - Utilisation and Development, Water Resources, Agriculture, Minerals & Energy Resources, Manufacturing Industries, Lifelines of National Economy.
 - c. **ECONOMICS:** Banking Services in India, Consumers Awareness, Economic Reforms in India, Statistics (Mean & Median), Poverty in India and **Current Affairs**

SAMPLE QUESTIONS

PART - A

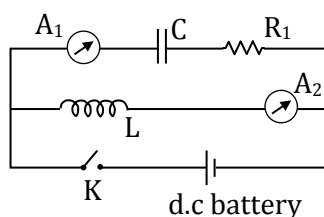
[for Science / IGNITE-19 students]

MATHEMATICS

- Q1. If $a \sec \alpha - c \tan \alpha = d$ and $b \sec \alpha + d \tan \alpha = c$, then
- A. $a^2 + c^2 = b^2 + d^2$ B. $a^2 + d^2 = b^2 + c^2$
C. $a^2 + b^2 = c^2 + d^2$ D. $ab = cd$
- Q2. If the roots of the equation $px^2 + qx + r = 0$ are in the ratio $l : m$, then
- A. $(l + m)^2 pq = lmr^2$ B. $(l + m)^2 pr = lmq^2$
C. $(l + m)^2 pr = lmq$ D. $(l + m)^2 pr = lmr^2$
- Q3. The volume of a cube (incu.cm) added to 3 times the total length of its edges (in cms) is equal to twice its surface area (insq.cm). The length of its diagonal (in cms) is:
- A. 6 B. $6\sqrt{3}$
C. $3\sqrt{6}$ D. $6\sqrt{6}$

PHYSICS

- Q1. If 25 W, 220 V and 100 W, 220 V bulbs are connected in series across a 440 V line, then
- A. only 25 W bulb will fuse B. only 100 W bulb will fuse
C. both bulbs will fuse D. None of these
- Q2. In a circuit, an inductor (L) and a capacitor (C) are connected as shown in figure. A_1 and A_2 are ammeters.



When key K is pressed to complete the circuit, then just after closing key (K), the readings of A_1 and A_2 will be :

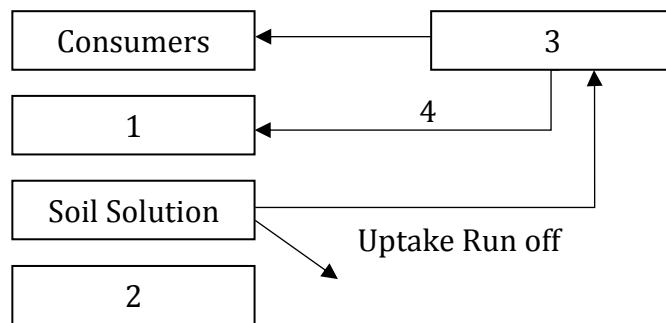
- A. zero in both A_1 and A_2 B. maximum in both A_1 and A_2
C. zero in A_1 and maximum in A_2 D. maximum in A_1 and zero in A_2
- Q3. A monochromatic light of wavelength λ_1 travelling in a medium of refractive index μ_1 enters a denser medium of refractive index μ_2 . The wavelength in the second medium is :
- A. $\lambda_1(\mu_1/\mu_2)$ B. $\lambda_1(\mu_2/\mu_1)$
C. $\lambda_1(\mu_2 - \mu_1)/\mu_2$ D. $\lambda_1(\mu_2 - \mu_1)/\mu_1$

CHEMISTRY

- Q1. The correct order of radii is :
- | | |
|------------------|----------------------------------|
| A. $N < Be < B$ | B. $F^- < O^{2-} < N^{3-}$ |
| C. $Na < Li < K$ | D. $Fe^{3+} < Fe^{2+} < Fe^{4+}$ |
- Q2. Which of the following is correct statement?
- | | |
|-------------------------------|----------------------------------|
| A. $NaCl$ & SO_2 are ionic | B. CS_2 & CaH_2 are covalent |
| C. SO_3 & CaH_2 are ionic | D. $NaCl$ & CaH_2 are ionic |
- Q3. IUPAC name of $CH \equiv C - CH = CH - CH_3$ is :
- | | |
|----------------------------|--------------------------|
| A. Pent - 3 - en - 1 - yne | B. 2 - Pentene - 4 - yne |
| C. 1 - Pentyne - 3 - ene | D. 4 - Pentyne - 2 - ene |

BIOLOGY

- Q1. Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (1-4). Identify the blanks.



- | | | | | |
|----|---------------|---------------|---------------|-------------|
| | 1 | 2 | 3 | 4 |
| A. | Producers | Litterfall | Rock | Detritus |
| B. | Rock minerals | Detritus | Litterfall | Producers |
| C. | Litterfall | Producers | Rock minerals | Detritus |
| D. | Detritus | Rock minerals | Producers | Litter fall |

- Q2. Systemic circulation is :
- | | | | | | |
|----|-----------------|---|---------|---|-----------------|
| A. | Left ventricle | $\xrightarrow{\text{Deoxygenerated blood}}$ | Tissues | $\xrightarrow{\text{Oxygenerated blood}}$ | Right ventricle |
| B. | Right ventricle | $\xrightarrow{\text{Oxygenerated blood}}$ | Tissues | $\xrightarrow{\text{Deoxygenerated blood}}$ | Right Auricle |
| C. | Left ventricle | $\xrightarrow{\text{Deoxygenerated blood}}$ | Tissues | $\xrightarrow{\text{Oxygenerated blood}}$ | Right Auricle |
| D. | Left ventricle | $\xrightarrow{\text{Oxygenerated blood}}$ | Tissues | \longrightarrow | |

Q3. Match the following columns.

	Column-I					Column-II				
	i.	Meristem						1.	Photosynthesis storage	
	ii.	Parenchyma						2.	Mechanical support	
	iii.	Collenchyma						3.	Actively dividing cells	
	iv.	Sclerenchyma						4.	Stomata	
	v.	Epidermal Tissue						5.	Sclereids	
		i	ii	iii	iv	v				
A.	1	3	5	2	4					
B.	3	1	2	5	4					
C.	2	4	5	1	1					
D.	5	4	3	2	1					

PART – B

[for IGNITE-19 students only]

MATHEMATICS

Q1. The number of distinct prime divisors of the number $512^3 - 253^3 - 259^3$ is :

- | | |
|------|------|
| A. 4 | B. 5 |
| C. 6 | D. 7 |

Q2. In a $\triangle ABC$ with $\angle A < \angle B < \angle C$, points D, E, F are on the interior of segments BC, CA, AB respectively. Which of the following triangles cannot be similar to ABC ?

- | | |
|--------------------|--------------------|
| A. $\triangle ABD$ | B. $\triangle BCE$ |
| C. $\triangle CAF$ | D. $\triangle DEF$ |

BIOLOGY

Q1. Which of the following organ systems jointly coordinate and integrate all the activities of the body organs?

- A. Neural system and sensory system
- B. Digestive system and respiratory system
- C. Neural system and endocrine system
- D. Circulatory system and respiratory system

Q2. When a pink flowered *Antirrhinum* plant is test crossed, then phenotypic ratio in resulting progenies is:

- | | |
|---------------------|---------------------|
| A. 1 Red : 1 White | B. 3 Red : 1 White |
| C. 2 Pink : 1 White | D. 1 Pink : 1 White |

[for Commerce students only]

ECONOMICS & CURRENT AFFAIRS

- Q1. Which of the following tax will be abolished by the GST?
- A. Service tax
B. Corporation tax
C. Income tax
D. Wealth tax
- Q2. All the currency notes except _____ bear the signature of the Governor of the RBI.
- A. one rupee note
B. hundred rupee note
C. five rupee note
D. two rupee note
- Q3. Monetary Policy Committee of RBI decided to keep repo rate _____ at 6% on 6th December 2017
- A. unchanged
B. high
C. low
D. moderate

MATHEMATICS

- Q1. If $a \sec \alpha - c \tan \alpha = d$ and $b \sec \alpha + d \tan \alpha = c$, then
- A. $a^2 + c^2 = b^2 + d^2$
B. $a^2 + d^2 = b^2 + c^2$
C. $a^2 + b^2 = c^2 + d^2$
D. $ab = cd$
- Q2. If the roots of the equation $px^2 + qx + r = 0$ are in the ratio $l : m$, then
- A. $(l + m)^2 pq = lmr^2$
B. $(l + m)^2 pr = lmq^2$
C. $(l + m)^2 pr = lmq$
D. $(l + m)^2 pr = lmr^2$
- Q3. If $a + b + c = 0$, then $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab}$ is :
- A. 1
B. -1
C. 0
D. 3

[for Humanities students only]

SOCIAL SCIENCE & CURRENT AFFAIRS

- Q1. Who among the following led the Civil Disobedience Movement in Peshwar?
- A. Maulana Abul Kalam Azad
B. Mohammed Ali
C. Khan Abdul Gaffar Khan
D. None of these

- Q2. Chemical industries usually are located near -
- A. Iron & steel industries
 - B. Oil refineries
 - C. Thermal powerplant
 - D. Automobile industry
- Q3. Monetary Policy Committee of RBI decided to keep repo rate _____ at 6% on 6th December 2017
- A. unchanged
 - B. high
 - C. low
 - D. moderate

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