AIEFA ENGINEERS VISION
All India Engineering Faculties Association
GATE I ESE I SSC-JE I BPSC-AE

BPSC AE 2019 Notification Test series
PAPER 5 & 6

Note:- This is Module 2 Test series which includes Branch paper (Paper 5 & 6) only. Separate test series with video discussion is already conducting/running for Module 1 Test series (HINDI, ENGLISH,GEN STUDIES, & GEN Engg.) & it is be available in store.

Starting from
28th JULY

BPSC-AE 2019 NOTIFICATION TEST SERIES
Branch:- CIVIL

This test series includes Section:- Branch paper (Paper 5 & 6) only

TOTAL TEST	PARTWISE TEST	FULL LENGTH TEST
40	34	6

Note:- Separate test series with video discussion is conducting for Module 1 Test series (HINDI, ENGLISH,GEN STUDIES, & GEN Engg.) & it is be available in store.

BPSC AE EXAM PATTERN

It includes two papers:- (1) Compulsory Paper
(2) Optional Paper

Compulsory Paper	Total Marks	Exam Time	Nature
General English	100	1hr	Qualifying
General Hindi	100	1hr	Qualifying
General Studies	100	1hr	Marks count for Rank
General Engineering	100	1hr	Marks count for Rank
Paper-iv	100	1hr	Marks count for Rank
Paper-v	100	1hr	Marks count for Rank

Note:-Above syllabus is common for all branches. Two papers called optional paper belong to technical which are given below.

Optional Paper

Technical Subject Name	Exam Duration	Total Marks
Civil Engg.		
Civil Engineering-1	1 Hour	100 Marks
Civil Engineering-2	1 Hour	100 Marks

SYLLABUS OF COMMON PAPERS

General English

(1) Active & Passive Voice

(2) Direct & Indirect Speech

(3) Synonyms

(4) Antonyms

(5) Comprehension Ability

(6) Sentence Completion

(7) Idioms & Phrases

(8) One Word Substitution

(9) Sentence Improvement

(10) Spotting Error

General Hindi

(1) संधि और संधि विच्छेद
(2) सामासिक पदों की रचना और समास विग्रह
(3) उपसर्ग और प्रत्यय
(4) पर्यायवाची शब्द
(5) विपरीतार्थक (विलोम) शब्द
(6) अनेकार्थक शब्द
(7) शब्द-युग्म
(8) संज्ञा शब्दों से विशेषण बनाना
(9) शब्द-शुद्धि : अशुद्ध शब्दों का शुद्धिकरण और शब्दगत अशुद्धि का कारण शुद्धिकरण
(10) वाक्य-शुद्धि : अशुद्ध याक्यों का शुद्धिकरण और वाक्यगत अशुद्धि का कारण
(11) वाच्य : कर्तृवाच्य, कर्मवाच्य और भाक्याच्य प्रयोग
(12) क्रिया : सकर्मक, अकर्मक और पूर्वकालिक क्रियाएं
(13) वाक्यांश के लिए एक सार्थक शब्द
(14) मुहावरे और लोकोक्तियों

General Studies

(1) Geography of India
(2) History of India
(3) Indian Polity
(4) Indian Economy
(5) Everyday Science
(6) General Science
(7) Environmental Science
(8) General Physics
(9) General Chemistry
(10) General Biology
(11) CURRENT AFFAIRS (from Oct 202 to July 2021)

GENERAL ENGINEERING

(1)Engineering Mechanics:- General equilibrium equation, Equation of motion, work, power and energy.

(2)Survey:-- Distance and area measurement, measurement of direction and angular slop, Leverage and height, General survey tools, Electrical workshop measurement, Mechanical workshop measurement equipment, linear and angular measurement, straight, flat and round measurement.

(3) Measurement:- Measurement of ammeter voltmeter ,charge meter insulation tester energy meter and their working principle.

(4)Mechanics of solid(SOM):- Generalized stress, Strain and constituting laws, transformation of stress, pressure, energy, analysis of beam, column and shaft, unsymmetrical bending, shear center, theories of failure.

(5) Engineering Materials and its Construction:- Brick, Lime, Cement, Aggregates, Glass, Cast Iron and Steel, Iron-Free Metals, Timber, Paints, Miscellaneous Engineering Materials, Engineering Material Testing, Brick Flooring and Wall Building.

(6) Engineering Economics and Management Engineering:- Principles of Engineering Economy, project planning, CPM and PERT techniques, construction Equipment and safety, analysis of rate of important construction items.

(7) Transport phenomenon: Laminar and turbulent flow, concept of boundary layer, continuity equation, Bernoulli's theorem, energy equation, flow measurement, dimensional analysis and modelling, one dimensional study, Conduction of heat through single and multilayer bodies including wells and cylinder, natural and forced convective heat transfer, concept of thermal boundary, Stefan Boltzmann law of radiation, Kirchhoff's law, concept of black and brown bodies.

(8) Energy Conversion: Thermodynamic process, First and second law of thermodynamics, carnot cycle, Rankine cycle, otto cycle, Diesel cycle, impulse and reaction turbine, Reciprocating and centrifugal pump.

(9) Basic Electrical Engineering & Electrical Machine:-circuit laws, network theorems, periodic signals, series & parallel connections of elements in ac & dc, transistor junctions, diodes, transistor equivalent circuit ,transistor common emitter circuit, magnetic effect of electric currents, magnetic circuits, Transformers & its circuit, electromagnetic energy conversion, DC machine (motor & generator), AC machine(motor & generator).

(10) Environmental engineering:- Water pollution and purification, waste water treatment, air pollution and its control, ecological balance.

SYLLABUS OF OPTIONAL PAPERS or BRANCH PAPER

PAPER 5

1)STRUCTRAL ANALYSIS

Detreminacy & Stability, Analysis of statically determinate & indeterminate Structure beam, truss, frame & arches.
Forces & deflection
Matrix method
Elastic stability of column
Influence line diagram of determinate & indeterminate structure.
Plastic Analysis of beam & slab.

2)

a) Reinforced cement concrete

Beam, slab, column, shear & diagonal tension
Concrete technology
Consideration of vertical & seismic forces in building frame design.

b) Design of Steel structure

Tesnsion, compression, flexural member,
roof girder, Plate girder, bracklet connection

c) Design of pre stress concrete

Element of pre stressed concrete structure & their losses.

Method of pre stressed concrete.

3)

Soil Mechanics

Geological forces & it's determination.
Rock formation & it's classification.
Nature & formation of soil, Properties & behaviour.
Seepage, consoildation, compaction.
Shear strength of soil, stability of slopes.
Soil stresses.

Foundation

Bearing capacity of soil, earth pressure theory
Retaining wall, sheet pile
Shallow & deep foundation, raft & well foundation
Machine foundation, Expansive soil , soil stabilization

PAPER 6

1)Hydrology & water Resources

General hydrological process, run off estimation.
Uses of hydrograph, empirical formula, probabilistic hydrologic analysis
Management of surface & ground water.
Irrigation engg. Principles
General water need for crops, description of irrigation work.
Flood causes, damage & control
River behaviour ,water drainage surface
General principle of water power engg.

2) Open channel flow

Description, energy & momentum principle
Uniform, GVF & RVF flow
Element of fluvial flow
Sediment transportation

3) Design of hydrolic structure

Design of dam,weir, barrages, canal and canal structure
Falls , cross drainage works, cross regulators , head regulator, canal outlets,
Design of embankment, hydro electric power plant.

4) Public Health Engineering

a) Water supply

Population forcats, types of pipe in water supply
Construction of tube well & dug well.
Design of slow sand filter & rapid gravity filter
Design of underground & overhead tank.
Design of water supply installation

b) Drainage & sanitation

Surface drainage , storm drainage soil sewerage
Design of trickling filter, design of septic tank
Design of imhoff tank, details of sanitary installation

5) Transportation Engineering

Geometric design of highway, elements of traffic engineering
Pavement design, highway materials , maintenance of highway
Elements of bridge engineering, IRC classification
Behaviour in consideration of load & superstructure.

TEST SERIES SCHEDULE (FOR MODULE 2)

Note:- Schedule may change as per BPSC Notification

TEST NO	DATE	SUBJECT	SYLLABUS
1	28th july	Transportation Engineering Part-1	Geometric design of highway, elements of traffic engineering
2	31st july	Transportation Engineering Part-2	Pavement design, highway materials , maintenance of highway
3	2nd Aug	Transportation Engineering Part-3	Elements of bridge engineering, IRC classification Behaviour in consideration of load & superstructure
4	4th Aug	Hydrology & water Resources Part-1	General hydrological process, run off estimation.Uses of hydrograph, empirical formula, probabilistic hydrologic analysis
5	6th Aug	Hydrology & water Resources Part-2	Management of surface & ground water. Irrigation engg. Principles General water need for crops, description irrigation work

6	8th Aug	**Hydrology & water Resources Part-3**	Flood causes, damage & control River behaviour ,water drainage surface General principle of water power engg.
7	10th Aug	**STRUCTRAL ANALYSIS Part-1**	Detreminacy & Stability, Analysis of static determinate & indeterminate Structure
8	12th Aug	**STRUCTRAL ANALYSIS Part-2**	beam, truss, frame & arches. Forces & deflection ,Matrix method
9	14th Aug	**STRUCTRAL ANALYSIS Part-3**	Elastic stability of column Influence line diagram of determinate & indeterminate structure. Plastic Analysis of beam & slab
10	15th Aug	**Soil Mechanics Part-1**	Geological forces & it's determination. Rock formation & it's classification.
11	17th Aug	**Soil Mechanics Part-2**	Nature & formation of soil, Properties & behaviour
12	19th Aug	**Soil Mechanics Part-3**	Seepage, consoildation, compaction. Shear strength of soil, stability of slopes. Soil stresses.
13	21st Aug	**Foundation Part-1**	Bearing capacity of soil, earth pressure theory
14	22nd Aug	**Foundation Part-2**	Retaining wall, sheet pile,Shallow & deep foundation, raft & well foundation
15	24th Aug	**Foundation Part-3**	Machine foundation, Expansive soil , soil stabilization
16	25th Aug	**Reinforced cement concr Part-1**	Beam, slab, column, shear & diagonal tension
17	27th Aug	**Reinforced cement concr Part-2**	Concrete technology Consideration of vertical & seismic forces building frame design.
18	29th Aug	**Design of Steel Structure Part-1**	Tesnsion, compression, flexural member,
19	31st Aug	**Design of Steel Structure Part-2**	roof girder, Plate girder, bracklet connect
20	1st sep	**Design of pre stress conc Part-1**	Element of pre stressed concrete structure & their losses.

21	2nd sep	**Design of pre stress conc Part-2**	Element of pre stressed concrete structure & their losses.
22	3rd sep	**Open channel flow Part-1**	Description, energy & momentum principle
23	4th sep	**Open channel flow Part-1**	Uniform, GVF & RVF flow,Element of fluvial flow, Sediment transportation
24	6th sep	**Water supply Part-1**	Population forcats, types of pipe in water supply. Construction of tube well & dug well.
25	7th sep	**Water supply Part-2**	Design of slow sand filter & rapid gravity Filter.Design of underground & overhead tank. Design of water supply installation
26	8th sep	**Drainage & Sanitation Part-**	Surface drainage , storm drainage soil sewerage.
27	9th sep	**Drainage & Sanitation Part-2**	Design of trickling filter, design of septic Tank.Design of imhoff tank, details ofsani Installation
28	10th Sep	**Design of hydrolic structure Part-1**	Design of dam,weir, barrages, canal and canal structure
29	11th sep	**Design of hydrolic structure Part-2**	Falls , cross drainage works, cross regulators , head regulator, canal outlets, Design of embankment, hydro electric power plant.
30	11th sep	**Transportation Engineering**	Full syllabus
31	12th sep	**Soil Mechanics**	Full syllabus
32	12th sep	**Foundation**	Full syllabus
33	12th sep	**Structure**	Full syllabus
34	13th sep	**Hrdrology & Water Resource**	Full syllabus
35	13th Sep	**Paper-v**	Full syllabus

36	13th Sep	Paper-vi	Full syllabus
37	15th Sep	Paper-v	Full syllabus
38	15th Sep	Paper-vi	Full syllabus
39	17th Sep	Paper-v	Full syllabus
40	17th Sep	Paper-vi	Full syllabus